Placer 28 EIP Project

Draft CEQA Initial Study/ NEPA Environmental Assessment/ TRPA Programmatic Environmental Assessment and Section 4(f) Evaluation

The project is located within County of Placer on State Route 28
Caltrans District 3-Placer County-28-KP 1.2/15.1, 16.4/17.8
(PM 0.8/9.4, 10.2/11.0)
EA 2A940, 29090
TRPA File Number 530-203-02

Prepared: May 2005

DEPARTMENT OF TRANSPORTATION
UNITED STATES OF AMERICA

TAHOE REGIONAL PLANNING AGENCY

Caltrans Metric

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General Information About This Document

What's in this document?

This document is a California Environmental Quality Act (CEQA) Initial Study/ National Environmental Policy Act (NEPA) Environmental Assessment/ Tahoe Regional Planning Agency (TRPA) Programmatic Environmental Assessment, which examines the potential environmental impacts of the proposed project located in Placer County, California. The document describes why the project is being proposed, the existing environment that could be affected by the project, potential impacts the project may have and avoidance, minimization and/or mitigation measures that would reduce/eliminate environmental impacts.

What should you do?

- Please read this Initial Study/Environmental Assessment/ Programmatic Environmental Assessment.

- We welcome your comments. If you have any concerns regarding the proposed project, please send your written comments to Caltrans by the deadline. Submit comments via regular mail to Caltrans, Attn: Jody Brown, Office of Environmental Management, 2389 Gateway Oaks Drive, Suite 100, Sacramento, California 95833; submit comments via email to jody_brown@dot.ca.gov.

- Submit comments by the deadline: June 10, 2005.

What happens after this?

After comments are received from the public and reviewing agencies, Caltrans, the Federal Highway Administration (FHWA) and TRPA may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project were given environmental approval and funding were appropriated, Caltrans could design and construct all or part of the project.

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Mitigated Negative Declaration

Placer 28 Roadway Rehabilitation

State of California, Department of Transportation

SCH# *not yet assigned*
03-PLA-028-KP 1.2/15.1, 16.4/17.8 (PM 0.8/9.4, 10.2/11.0)
Expenditure Authorization (EA) 2A940, 29090

*P*repared pursuant to the California Environmental Quality Act of 1970 (Division 13 of the Public Resources Code)

Project Description: The California Department of Transportation (Caltrans), the Tahoe Regional Planning Agency (TRPA) and the Federal Highway Administration (FHWA) propose to construct water quality improvements, bike lanes, and operational improvements from Tahoe City to the Nevada State line, except for the limits of the Kings Beach community. Water quality improvements will include collection and treatment of storm water runoff from the highway by rehabilitating the existing drainage system, and constructing approved water quality treatment improvements, such as sand collection vaults, bio-swales, and infiltration basins. Operational improvements will include intersection lighting, minor superelevation and cross slope corrections, constructing left-turn pockets and 2-way left-turn lanes at various locations. Shoulders will be widened to a minimum of 1.2 meters to provide for Class II bike lanes and drainage conveyance capacity. An overlay will be placed over the entire project.

Determination: An Initial Study (IS) has been prepared by Caltrans. It has been determined that the proposed project will not have a significant effect upon the environment, for the following reasons:

The project will not significantly impact FEMA designated floodplains, water quality, traffic, recreational areas, hazardous materials, sensitive plant/animal species, biological communities, or mineral resources. No change will occur in local and regional air quality, population, or planned land use. Seismic and soil related hazards will not increase, nor will the ambient noise in the region permanently increase. No cultural resources or historic properties will be impacted by the project.

The project may potentially have significant impacts to SEZ areas and scenic resources; however, project impacts to these resources will be mitigated to a level of insignificance as specified in the mitigation measures contained in the IS.

John Webb
Office Chief
North Region Environmental Services
California Department of Transportation

Date

03-PLA-28-*KP 1.2/15.1, 16.4/17.8*
(PM 0.8/9.4, 10.2/11.0)
EA 2A940, 29090
TRPA File Number 530-203-02

Placer County, State Route 28,
from Kilometer Post 1.2/15.1, 16.4/17.8
(PM 0.8-9.4, 10.2/11.0)

Placer 28 EIP Project #998
CEQA Initial Study
NEPA Environmental Assessment/ TRPA Programmatic Environmental Assessment and Section 4(f) Evaluation

Submitted Pursuant to: (State) Division 13, Public Resources Code
(Federal) 42 USC 4332(2)(C) and 49 USC 303

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and

THE STATE OF CALIFORNIA
Department of Transportation –District 3

TAHOE REGIONAL PLANNING AGENCY

4/25/2005
Date of Approval

John Webb
Office Chief
North Region Environmental Services
California Department of Transportation

4/20/2005
Date of Approval

~~Carl Hasty~~ John Singlaub
~~Deputy~~ Director
Tahoe Regional Planning Agency

4/27/2005
Date of Approval

Leland W. Dong
Project Development Engineer
North Region Team Leader
Federal Highway Administration

Summary

The California Department of Transportation (Caltrans), the Tahoe Regional Planning Agency (TRPA), and the Federal Highway Administration (FHWA), are proposing a project on State Route (SR) 28 from Tahoe City to the Nevada State line, except for the limits of the Kings Beach community. The first section of the project, from Caltrans postmile (PM) 0.8 at the eastern end of Tahoe City to PM 9.4 just west of the intersection of SR 28 with SR 267, will be funded under Expenditure Authorization (EA) number 2A940 at an estimated cost of $37,761,000. The second section of the project, from Caltrans PM 10.2 at Chipmunk Street to PM 11.0 at the Nevada State line, will be funded under EA 29090 at an estimated cost of $3,079,000.The primary purpose of this project is to collect and treat the storm water runoff from impervious surfaces within the State right-of-way.

The project will meet needs identified in the Lake Tahoe Basin Environmental Improvement Program (EIP) and complete elements of the resurfacing, restoring, and rehabilitating (RRR) project constructed in 2000. On SR 28 the objective of the Tahoe EIP is to achieve the Environmental Standards Carrying Capacity (ESCC) thresholds required by Public Law 96-551 and adopted for the Tahoe Region in 1982 by TRPA. The EIP identifies hundreds of projects that will contribute to the overall effort of meeting the thresholds in the Tahoe Basin for nine categories of resources. This project will include EIP projects 762 (Class II Bike Lane), 788 (Route 28/267 intersection improvements), 798 (Scenic Turnouts), and 998 (Water Quality improvements).

Water quality improvements will include collection and treatment of storm water runoff from the highway by rehabilitating the existing drainage system, and constructing approved water quality treatment improvements, such as sand collection vaults, bio-swales, and infiltration basins. In addition, the project will complete the necessary RRR elements by providing operational improvements that will include intersection lighting, minor superelevation and cross slope corrections, constructing left-turn pockets and two-way left-turn lanes at various locations. Shoulders will be widened to a minimum of 1.2 meters (4 feet) to provide for Class II bike lanes to connect to the existing bike paths around the north shore of Lake Tahoe and increase drainage conveyance capacity. An overlay will be placed over the entire project.

The project is subject to state, federal, and TRPA environmental review requirements. The following tables summarize the impacts due to the project with respect to the

California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and the TRPA Code. Where possible, mitigation, avoidance and/or minimization measures are provided to reduce the severity of each impact. Permits from the State Department of Fish and Game (1602 Agreement), U. S. Army Corps of Engineers Nationwide 404 Permit, TRPA, and the Lahontan Regional Water Quality Control Board (401) will be required. Encroachment permits may be necessary from various agencies. Additional permits for the material site and disposal site may be required.

CEQA Environmental Impacts Summary

Resource Area	Potential Impact	Significance	Mitigation, Avoidance and Minimization Measures	Significance after Measures	Reference Page(s)
Air Quality	Dust generated by construction	Less than Significant	AQ1: Construction measures may include but not be limited to watering of disturbed areas and prompt covering and removal of dirt	Less than Significant	52-54
Biology	Potential impacts to Sensitive Amphibians and Reptiles	Less than Significant	WL2: Pre-construction amphibian surveys	Less than Significant	65-67, 74
Biology	Potential impacts to riparian, jurisdictional wetlands (.087 acres) and waters of the U.S. (.112 acres)	Less than Significant	WQ1: Restrict timing of in-stream activities WQ2: Minimize disturbance to creek channel and adjacent areas WQ3: Containment Measures / Construction site BMPs WQ4: De-watering Activities WQ5: Restore stream and riparian onsite WQ6: Water Quality or Excess Coverage Mitigation Fees	Less than Significant	65-66
Biology	Potential impacts to stream environment zone (SEZ) habitat	Significant	WQ7: Restore disturbed SEZs at a 1.5 to 1 ratio	Less than Significant	65-66
Biology	Potential impacts to Avian Species	Less than Significant	WL3: Restrict timing of woody vegetation removal WL4: Pre-construction surveys: Nesting Birds WL5: Limit vegetation removal	Less than Significant	67-69
Biology	Potential impacts to fish passage for species such as the Brook, Rainbow and Lahontan Cutthroat Trout	Less than Significant	WL1: Ensure fish Passage	Less than Significant	67-69
Biology	Impacts to sensitive species during construction	Less than Significant	AV1: Establish Environmentally Sensitive Areas (ESAs)	Less than Significant	67-69
Hazardous Materials	Exposure to potentially hazardous materials in traffic striping, soils, and groundwater	Less than Significant	HZ1: Reduce potential exposure to petroleum hydrocarbons by monitoring for methane gas, preparation of a health and safety plan, proper handling of waste products HZ2: Minimize exposure to chromium and lead from traffic striping	Less than Significant	88-91
Noise	Temporary disbursed construction related noise impacts	Less than Significant	N1: Minimize construction noise at night	Less than Significant	96-97
Transportation	Construction related traffic delays and inconvenience	Less than Significant	T1: Provide timely information on potential transportation delays, minimize the duration and frequency of work adjacent to affected properties, and maintain traffic to greatest extent feasible during construction	Less than Significant	35-38
Transportation	Alternative 1: Reduced shoulder parking availability particularly evident between Estates Drive and Beach Street	Less than Significant	None	Less than Significant	35-38
Visual	Views will be altered, vegetation removed, terrain altered and manmade features introduced by the project	Significant	V1: Minimize the impact on existing views V2: Reduce, minimize and compensate for impacts to vegetation V3: Reduce impacts to the existing terrain V4: Reduce the impact of manmade structures	Less than Significant	44-49

NEPA Environmental Impacts Summary

Resource Area	Potential Impact	Measures	Reference Page(s)
Air Quality	Dust generated by construction	AQ1: Construction measures may include but not be limited to watering of disturbed areas and prompt covering and removal of dirt	52-54
Biology	Potential impacts to Sensitive Amphibians and Reptiles	WL2: Pre-construction amphibian surveys	67-69
Biology	Potential impacts to riparian, jurisdictional wetlands (.087 acres) and waters of the U.S. (.112 acres)	WQ1: Restrict timing of in-stream activities WQ2: Minimize disturbance to creek channel and adjacent areas WQ3: Containment Measures / Construction site BMPs WQ4: De-watering Activities WQ5: Restore stream and riparian onsite WQ6: Water Quality or Excess Coverage Mitigation Fees WQ7: Restore disturbed SEZs at a 1.5 to 1 ratio	65-66
Biology	Potential impacts to Avian Species	WL3: Restrict timing of woody vegetation removal WL4: Pre-construction surveys: Nesting Birds WL5: Limit vegetation removal	67-69
Biology	Potential impacts to fish passage for species such as the Brook, Rainbow and Lahontan Cutthroat Trout	WL1: Ensure fish Passage	67-69
Biology	Potential spreading of weeds during construction	WC1: Weed Free Construction Equipment WC2: Equipment Staging in Weed Free Areas WC3: Weed Free Erosion Control	77-78
Biology	Impacts to sensitive species during construction	AV1: Establish ESAs	67-69
Community	Minor construction impacts to a community potentially protected by Executive Order 12898.	C1: Bilingual public participation campaign	20-21
Hazardous Materials	Exposure to potentially hazardous materials in traffic striping, soils and groundwater	HZ1: Reduce potential exposure to petroleum hydrocarbons by monitoring for methane gas, preparation of a health and safety plan, proper handling of waste products HZ2: Minimize exposure to chromium and lead from traffic striping	88-91
Noise	Temporary disbursed construction related noise impacts	N1: Minimize construction noise at night	96-97
Transportation	Construction related traffic delays and inconvenience	T1: Provide timely information on potential transportation delays, minimize the duration and frequency of work adjacent to affected properties, and maintain traffic to greatest extent feasible during construction	35-38
Transportation	Alternative 1: Reduced shoulder parking availability particularly evident between Estates Drive and Beach Street	None	35-38
Visual	Views will be altered, vegetation removed, terrain altered and manmade features introduced by the project	V1: Minimize the impact on existing views V2: Reduce, minimize and compensate for impacts to vegetation V3: Reduce impacts to the existing terrain V4: Reduce the impact of manmade structures	44-49

TRPA Environmental Impacts Summary

Resource Area	Potential Impact	Measures	Reference Page(s)
Air Quality	Dust generated by construction	AQ1: Construction measures may include but not be limited to watering of disturbed areas and prompt covering and removal of dirt	52-54
Biology	Potential impacts to riparian and stream environment zone (SEZ) habitat	WQ1: Restrict timing of in-stream activities WQ2: Minimize disturbance to creek channel and adjacent areas WQ3: Containment Measures / Construction site BMPs WQ4: De-watering Activities WQ5: Restore stream and riparian onsite WQ6: Water Quality or Excess Coverage Mitigation Fees WQ7: Restore disturbed SEZs at a 1.5 to 1 ratio	65-66
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List of Abbreviated Terms

§	Section
AC	Asphalt Concrete
ACOE	Army Corps Of Engineers
AQ	Air Quality
ASR	Archaeological Survey Report
BMPs	Best Management Practices
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon Monoxide
CWA	Clean Water Act of 1972
CTWLTL or TWLTL	Continuous Two-Way Left-Turn Lane
DBH	Diameter Breast Height
EIP	Environmental Improvement Program
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
Ft	Feet
HCP	Habitat Conservation Plan
HPSR	Historic Properties Survey Report
IEC	Initial Environmental Checklist
I-80	Interstate 80
km	kilometer(s)
KP	kilometer post
LOS	Level of Service
LTBMU	Lake Tahoe Basin Management Unit
M	meter(s)
mg/l	Milligrams/Liter
mi	mile(s)
MS4	Municipal separate storm sewer system serving a population of 100,00 or more.
ND/IS	Negative Declaration/Initial Study
NO_x	Nitrous Oxides
NPDES	National Pollutant Discharge Elimination System
PM	post mile
PM-10	Particulate Matter greater than 10 microns in size
ROG	Reactive Organic Gas
RRR	Resurfacing, Restoration, and Rehabilitation
RSP	Rock Slope Protection
RWQCB	Regional Water Quality Control Board
SCSP	Slotted Corrugated Steel Pipe
SEZ	Stream Environment Zone
SHPO	State Historic Preservation Office
SR	State Route, document may also use term “Highway”
SWPPP	Storm Water Pollution Prevention Plan
TMP	Caltrans Traffic Management Plan
TRPA	Tahoe Regional Planning Agency
USFS	United States Forest Service, Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMT	Vehicle Miles Traveled
WPCP	Water Pollution Control Plan

Chapter 1 Proposed Project

1.1 Project Description

The proposed project will construct water quality improvements, bike lanes, and operational improvements on State Route 28 (SR 28) from Tahoe City to the Nevada State line, except for the limits of the Kings Beach community.

Federal and State funds will be used. Therefore, the project must be reviewed for compliance with both the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). This Initial Study examines and determines the level of impact pursuant to CEQA. In addition, this document serves as an Environmental Assessment pursuant to NEPA.

Furthermore, since the project is located in the Tahoe Basin, the project is subject to the requirements of the Tahoe Regional Planning Agency (TRPA). This document has been prepared pursuant to Chapter 5 of TRPA Code and meets the requirements of a TRPA Programmatic Environmental Assessment.

Impacts of the project on the existing environment were determined by examining the following project features. Mapping showing project features and limits of environmental studies are contained in Appendix B.

Basic Roadway Design Objectives

- Create left-turn pockets and continuous two-way left-turn lanes (CTWLTL) to current standards.
    - Addition of left-turn pockets and/or two-way left-turn lanes at county roads and commercial areas where feasible and recommended in Operational Analysis.
    - Install new intersection and crosswalk lighting throughout the project limits. New lighting will meet TRPA guidelines and be similar to “Dark Skies” ordinances adopted in other areas.
    - Minor corrections to superelevations and cross slopes.

- Overlay the roadway with 40mm (1.6in) Asphalt Concrete (AC) to restore the structural adequacy of the roadway.

- Widen shoulders to 1.2-1.8 meters (4-6 feet) to provide for bike lanes and in areas with parking widen to 3.6 meters (12 feet).

- Transit stops will be paved to prevent soil from being tracked onto the highway.

Drainage and Storm Water

- Reconstruct the existing drainage system: replacement of culverts and drainage inlets, construction of concrete sand collection vaults and construction of drainage outfalls to the lake through variable width drainage easements.

- Installation of dike, concrete gutter, and slotted corrugated steel pipe (SCSP) to collect roadway runoff for storm water treatment. Roadway runoff will be conveyed to underground sand collection vaults, open infiltration basins, and/or biofiltration swales for treatment. Infiltration basins are "bathtub" type features where particulates in the stormwater can settle out while the actual water flows back into the ground within a 72 hour period; a biofiltration swale acts in the same way, except that it is a smaller linear feature that uses vegetation to trap particles rather than detainment. Sheet flow across the roadway will be enhanced in areas where it is determined that it provides better treatment than collection.

- Construct paved maintenance pullouts at sand collection vaults.

- Due to the close proximity of SR 28 to Lake Tahoe, the topography, and the lack of undeveloped parcels between the roadway and the lake, most runoff will not be infiltrated in basins. Rather, runoff will be collected in sand collection vaults (see Appendix B Project Mapping) to permit settlement of material.

- Infiltration basins will be used to treat roadway runoff wherever possible throughout the project limits (see Appendix B Project Mapping). Infiltration basins will be constructed to blend with the existing topography. An access road will be constructed from the highway to the basin. Both the basin and

the access road will be vegetated with grasses. Infiltration basin locations were selected based on the following criteria:

1. At or near existing discharge point of runoff from State right-of-way;
2. Down gradient from discharge point;
3. Flat or gently sloping topography;
4. Undeveloped;
5. Not in an obvious Stream Environment Zone (SEZ);
6. Not in a floodplain;
7. Accessible by construction and maintenance equipment;
8. Greater than 30m (100 ft) up gradient or 3m (10 ft) down gradient of structural foundations; and
9. Not above a known underground hazardous waste plume.

- At sites that do not meet the preceding criteria, biofiltration swales (bio-swales) will be created. Because of the climate and soil conditions in the Tahoe Basin, vegetation may not fully establish in the bio-swales. However, even without vegetation, bio-swales will provide water quality improvements by decreasing runoff velocities thus encouraging sedimentation.

- As more information becomes available through the design process, a more detailed analysis of appropriate Best Management Practices (BMPs), will be prepared pursuant to the most current Caltrans Project Planning and Design Guide (PPDG). The PPDG provides specific instructions for the deployment of Caltrans' approved BMPs. Among its requirements, the PPDG ensures that BMPs will be of adequate size to handle the design storm volume of water they are intended to treat and adequately address potential vector control issues. Based on this analysis it is not likely that all treatment BMPs, identified in Appendix B, will be deployed.

Tree Removal and Erosion

Widening at several locations will require tree removal and grading, including soil excavation and slope embankment work. Tree removal will be kept to a minimum with special attention given to the preservation of larger trees. Disturbed slopes will be revegetated. Erosion control measures will be incorporated on all other unvegetated slopes within state right-of-way, where feasible.

Right-of-Way

Additional right-of-way will be needed for some of the drainage system and operational improvements. Furthermore, drainage easements will be required throughout the project limits to improve drainage outfalls to convey storm water runoff to the lake.

In order to enhance bicycle accessibility, parking along the shoulders of the highway will be eliminated in some locations. Signage will be added to the highway where parking is prohibited.

Specific Location Improvements

- Widen shoulders to a minimum of 1.2 m (4 ft) throughout the project limits. Additional shoulder paving will be provided where needed and justified, such as for transit stops, scenic viewing areas, parking and drainage capacity.
- Scenic turnouts will be provided on Dollar Hill at KP 5.29 (PM 3.29) and at KP 11.67 (PM 7.25).
- Addition of a 1.2 m (4 ft) minimum Class II bike lane from the end of the existing Class I bike path at Dollar Drive to the Nevada State line (except for Kings Beach). New shoulder striping will be added to designate the area as a bike lane.
- Shoulder widening from KP 1.2 to 12.2 (PM 0.8 to 7.6) will be up to 1.8 m (6 ft) on flat, primarily unvegetated soil.
- From KP 4.0 to 4.3 (PM 2.5 to 2.7) westbound, shoulders will be widened up to 1.8 m (6 ft) into a 1.2 m (4 ft) high cut slope currently protected with rock slope protection (RSP). The RSP will be replaced.

- Construct additional left-turn lanes in the westbound direction at Dollar Drive (KP 4.75; PM 2.95) and in the eastbound direction at Lardin Way (KP 6.84; PM 4.25), Ridgewood Road (KP 7.82; PM 4.86), Granite Road (KP 11.59; PM 7.20), Stag Drive (KP 12.07; PM 7.50) and Estates Drive (KP 12.55; PM 7.80). Turn pockets may be constructed at additional locations pending additional traffic studies.

- Continuous, two-way left turn lanes will be constructed from Sierra Terrace Road (KP 1.46; PM 0.91) to KP 1.77 (PM 1.10); from Old Mill Road (KP 3.84; PM 2.39) to Dollar Hill Drive (KP 4.21; PM 2.62); and from Fabian Way (KP 4.57; PM 2.84) to Dollar Drive (KP 4.75; PM 2.95). Left turns from westbound SR 28 to Lakewood Lane will be prohibited.

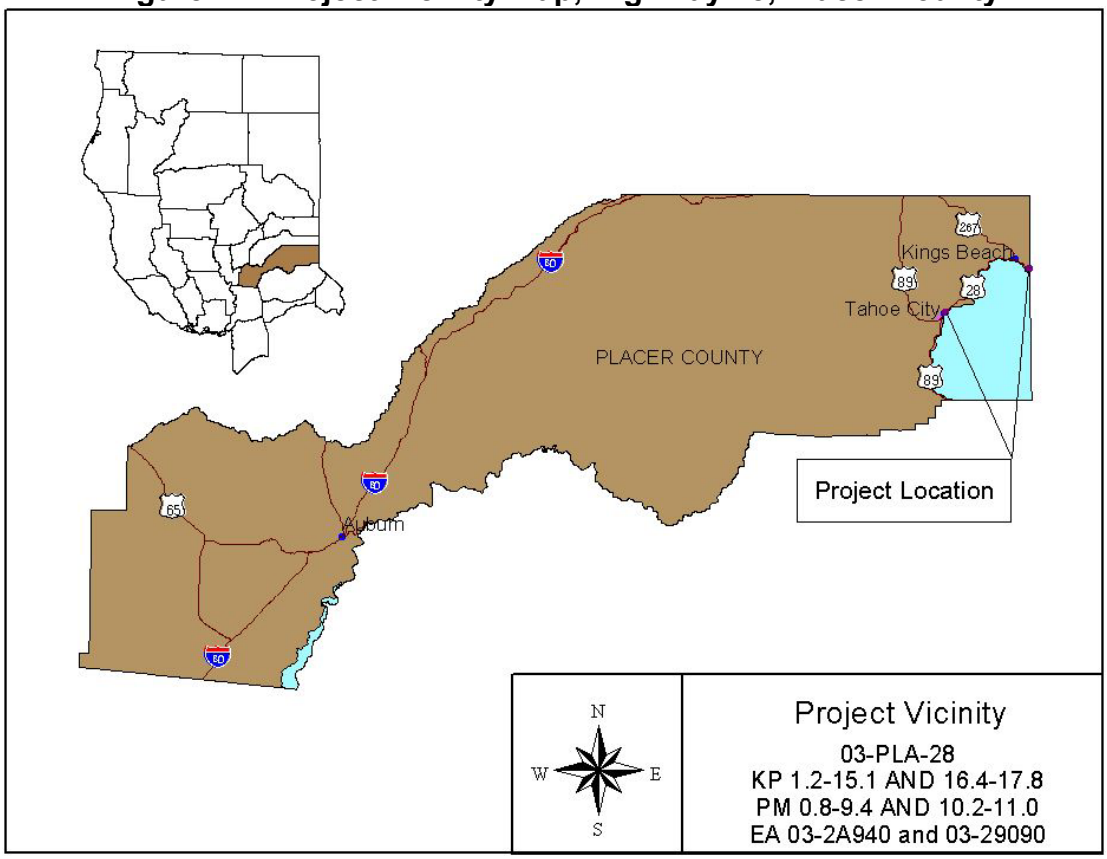
- From Estates Drive (KP 12.6; PM 7.8), to the National Avenue, (KP 13.5; PM 8.4), four-lane section, curb and gutter will be constructed to aid drainage, provide safer pedestrian use and to better regulate parking. Where needed and feasible, additional paving will be provided and striped for parking off the shoulder. Shoulder parking will be prohibited by painting curbs and/or installing "No Parking" signs.

- Reconstruct the SR 28/267 intersection to provide a safer turning radius for large vehicles.

- Infiltration basins are proposed at the following locations (Caltrans kilo post followed by the post mile in parentheses. R's are on the eastbound side and L's are on the westbound side of the highway): 1.54R (0.96R), 3.36R (2.09R), 3.70R (2.30R), 3.78R (2.35R), 4.17R (2.66R), 4.41R (2.74R), 5.89R (3.66R), and 10.44R (6.49R). Existing basins at 5.21L (3.24L), 5.58R (3.47R), 5.58L (3.47L), 5.68R (3.53R), and 5.76R (3.58R) will be enlarged. Some minor rockwork will occur at an existing basin at 5.29R (3.29R).

- Bio-swales are proposed at the following locations (Caltrans kilo post followed by the post mile in parentheses. R's are on the eastbound side and L's are on the westbound side of the highway): 1.24 (0.77R), 1.26 (0.78L), 1.35 (0.84L), 3.49 (2.17R), 3.99 (2.48R), 4.02 (2.50R), 4.17R (2.59R), 4.78 (2.97R), 10.49 (6.52R), 13.15 (8.17R), 14.14 (8.79R), 16.56 (10.29R), and 17.43 (10.83R).

Figure 1-1 Project Vicinity Map, Highway 28, Placer County



1.2 Purpose and Need

The primary purpose of this project is to collect and treat the storm water runoff from impervious surfaces within the State right-of-way. Secondary purposes of the project are to to provide Class II bike lanes to connect to the existing bike paths around the north shore of Lake Tahoe, enhance the ability of the public to view the aesthetically pleasing features of Lake Tahoe, improve traffic operations at the Route 28/267 intersection, and preserve the investment in the existing highway section. The purposes of the project were developed to meet the needs identified below.

Caltrans District 3, through a National Pollution Discharge Elimination System (NPDES) permit adopted July 15, 1999, with the State Water Resources Control Board (SWRCB), is required to collect, treat and/or infiltrate storm water runoff

generated by a 20-year, one-hour design storm from all impervious surfaces. The existing drainage system does not provide collection or treatment of storm water runoff from the highway.

TRPA has established the Environmental Improvement Program (EIP) to help achieve the environmental standards adopted for the Tahoe Basin. The EIP consists of hundreds of projects to be implemented by various organizations throughout the Tahoe Basin. Caltrans is the lead agency on dozens of EIP projects and is committed to implementing those projects. The proposed water quality improvements along SR 28 are identified as Project No. 998 in the EIP. The proposed Class II bike lanes from Dollar Hill to North Stateline are identified as Project No. 762. The proposed intersection improvements at the Route 28/267 junction are identified as Project No. 788. The proposed scenic turnouts are identified as Project No. 798. Each project is designed to contribute to the overall effort of meeting the TRPA thresholds in the Tahoe Basin.

Motorists along SR 28 in the two-lane sections currently experience delays when a vehicle is waiting in the traveled way to turn left at county roads and in commercial areas. Additional left-turn lanes and continuous, two-way, left-turn lanes are needed to reduce the delay for motorists passing through these sections.

The intersection at SR 28 and 267 currently does not provide adequate turning width for commercial and emergency vehicles. Additionally, several county road intersections do not provide adequate sight distance and width.

Many features of SR 28 (lighting, bicycle and pedestrian facilities) lack consistency and do not meet current Caltrans and community plan standards that were established by the various communities along the north shore of Lake Tahoe.

This project also serves as a follow-up to an asphalt concrete overlay project that was completed in 2000 (EA 0A520). That project did not upgrade the nonstandard features (such as narrow shoulder widths, off camber curves, etc) within the project limits. Due to the limited amount of right of way and the cost of acquisition for sliver takes on adjacent parcels, some design exceptions will be prepared as part of the Placer 28 EIP project to address nonstandard features that cannot be corrected. Additionally, the existing drainage system, constructed in the mid-1940s and upgraded in the early-1960s, has deteriorated and requires rehabilitation.

1.3 Environmental Setting

The project is located on SR 28 within the Lake Tahoe Basin, running parallel to the north shore of the lake. The Lake Tahoe Basin is an intermountain basin formed by the faulting of the rocks of the Sierra Nevada to the west and the Carson Range on the east. Lake Tahoe occupies a down-dropped block, or graben, that is bordered by steeply dipping faults.

The dominant plant community in the general project area consists of upper montane coniferous forest. The coniferous forest is dominated by ponderosa pine (*Pinus ponderosa*), Jeffery pine (*Pinus jefferyi*), and white fir (*Abies concolor*). Common shrubs include antelope bitterbrush (*Purshia tridentata*), bush chinquapin (*Chrysolepiss semprivirens*), huckleberry oak (*Quercus vaccinifolia*), mountain snowberrry (*Symphoricarpus rotundifolius*), and green-leaf manzanita (*Arctostaphylos patula*).

Several natural drainages occur within the project area and intersect SR 28, including Burton Creek, Dollar Creek, Watson Creek, Carnelian Canyon Creek, Tahoe Vista (Snow) Creek and Griff Creek, as well as several intermittent unnamed stream-courses. Riparian areas within the project area are dominated by alder (*Alnus incana* ssp *tenuifolia),* willow (*Salix*, sp.), and black cottonwood (*Populus trichocarpa*). Understory shrubs include twinberry (*Lonicera involucrata*), mountain maple (*Acer glabrum* var. *torreyi*), and creek dogwood (*Cornus sericea*).

The Native American Tribe known as the Washoe are the locally indigenous people of the Lake Tahoe Basin. Euro-American settlement began in the area during the 1860s, sparked to some degree by the discovery of silver at the Comstock Lode near Virginia City, Nevada, and the need for lumber to supply the mines.

The present alignments of State Routes 28 and 267, as well as National Avenue follow approximately the same routes as the Washoe Paiute Indian trail and the Emigrant Trail. The 1866 General Land Office plot map shows a shoreline route similar to the alignment followed by the present SR 28. The Shoreline Road (now SR 28) was originally built in 1928 to connect north shore communities.

The current SR 28 is the only north shore thoroughfare that traverses the course of the north part of the lake. The highway is accessed by a number of driveways and minor local road intersections with and without left-turn pockets. Highway 28 is two lanes (one in each direction) from Tahoe State Park to Estates Drive. From Estates Drive to

Beaver Street, in Kings Beach, the highway is 4 lanes. From Beaver Street to the Nevada Stateline there are two lanes of traffic. Two-way continuous left-turn lanes exist from Lake Forest Drive to Dollar Hill (KP 3.91 - 4.22; PM 2.43 – 2.62), Center Street (KP 9.24; PM 5.74) to KP 9.87 (PM 6.13) and from KP 14.23 (PM 9.18) to SR 267 (KP 15.03; PM 9.34). Within the project limits, the highest peak hour traffic volumes are west of State Route 267 at KP 14.8 (PM 9.2) and at the Nevada stateline (KP 17.8; PM 11.0).

Land use along SR 28 between Tahoe City and the Nevada State line is dominated by human development. State Route 28 passes through the communities of Tahoe City, Lake Forest, Cedar Flat, Carnelian Bay, Tahoe Vista, Kings Beach, and Brockway. Business and residences are located adjacent to SR 28 for the majority of the project length. In addition to serving residents of these communities, the project area experiences intense usage associated with tourism throughout the year.

Presidential Executive Order 13057 issued on July 26, 1997, declared the Lake Tahoe Region an area of national environmental concern. Executive Order 13057 created the Federal Partnership involving five Cabinet-level Agency Secretaries and called for a Memorandum of Agreement (MOA) between the Federal Partnership, the States of California and Nevada, the Tahoe Regional Planning Agency (TRPA), and the Washoe Tribal Government to facilitate coordination and corporation. The MOA was subsequently signed by the Governor of California, which affirmed a commitment to manage and protect Lake Tahoe's natural resources, to achieve and maintain the previous environmental thresholds, and to adopt, fund and implement the Lake Tahoe Environmental Improvement Program (EIP).

1.4 Permits and Approvals Needed

Based on studies conducted for this project, Caltrans anticipates that no significant environmental impacts will occur on the project. Accordingly, a Negative Declaration will most likely be approved by Caltrans pursuant to CEQA. If a significant impact, which cannot be mitigated below a level of significance, is determined to exist, then an Environmental Impact Report will be necessary.

An Environmental Assessment has been prepared pursuant to the Federal Highway Administration (FHWA) NEPA regulations at 23 CFR 771.115. Based on studies for this project, no significant impacts pursuant to NEPA are anticipated. Therefore, a Finding of No Significant Impact (FONSI) is anticipated to be approved by FHWA.

If significant impacts are determined to result from the project, then an Environmental Impact Statement will be prepared and submitted for approval to FHWA.

A Programmatic Environmental Assessment has been prepared pursuant to TRPA Code for projects that require additional information to determine the level of significance than what is identified in the Initial Environmental Checklist. TRPA will prepare a Finding based on the Programmatic Environmental Assessment pursuant to Code Section 5.2B. TRPAs finding will either be: a) Finding of No Significant Effect; b) Mitigated Finding of No Significant Effect; or c) an Environmental Impact Statement, which will be prepared if a significant effect may occur.

Permits from the State Department of Fish and Game (1602 Agreement), U. S. Army Corps of Engineers (ACOE) Nationwide 404 Permit, the TRPA, and the Lahontan Regional Water Quality Control Board (401 certification) will be required. Caltrans will obtain an exception to the prohibition on soil disturbance in Stream Environment Zones (SEZs) from Lahontan. The project will also be subject to the National Pollutant Discharge Elimination System (NPDES) permit that has been issued by the SWRCB for all Caltrans facilities. Encroachment permits may be necessary from various agencies. Additional permits for the material site and disposal site may be required.

1.5 TRPA Thresholds

The objective of the Tahoe EIP is to achieve the Environmental Standards Carrying Capacity (ESCC) thresholds required by Public Law 96-551 and adopted for the Tahoe Region in 1982 by TRPA. The aforementioned thresholds are contained in the TRPA Code of Ordinances (Code). There are nine categories of thresholds programs, and they are: 1) Water Quality Program, 2) Scenic Resources Program, 3) Soil Conservation/SEZ Program, 4) Recreation Program, 5) Noise Program, 6) Air Quality/Transportation Program, 7) Fisheries Program, 8) Vegetation Program, and 9) Wildlife Program. Specific TRPA thresholds are included in Chapter 3. As part of this environmental review, studies were carried out to ensure that the project will not adversely impact the ability to meet these thresholds in the Tahoe Basin.

In addition, this project will address five of the nine TRPA environmental thresholds (water quality, air quality/transportation, scenic resources/community design, soil conservation, and vegetation). The water quality threshold will be achieved by

implementing appropriate storm water BMPs, including treatment BMPs and erosion control BMPs. The air quality/transportation threshold will be met by the incorporation of planned Class II bike lanes (encouraging alternate modes of travel) and by improving traffic flow with the addition of left turn channelization and two-way left turn lanes. Caltrans will comply with the scenic resources/community design, soil conservation, and vegetation thresholds by revegetating disturbed and denuded areas, and by painting lighting poles and the backs of signs.

1.6 Areas of Known Controversy

Areas where the project will have impacts outside the existing Caltrans right-of-way are expected to be the most controversial part of the project. Impacts outside the Caltrans right-of-way will mainly occur with the installation of new storm water treatment facilities such as detention and infiltration basins, outfalls, and bio-swales. Caltrans will make all efforts to blend these features in with the existing environment. In addition, Caltrans will appraise and make offers to acquire the property rights (easements, etc.) needed for project completion.

The highway shoulders must be at least 3.6m (12ft) to allow for the shoulder and a bike lane. Where the shoulder width of 3.6m (12ft) cannot be obtained, parking will generally not be permitted. It is expected that the necessary amount of shoulder widening will not be possible near a number of lakeside frontage properties that currently use the dirt and paved shoulder area for parking in the summer.

Figure 1-1 Project Location Map, Placer Highway 28

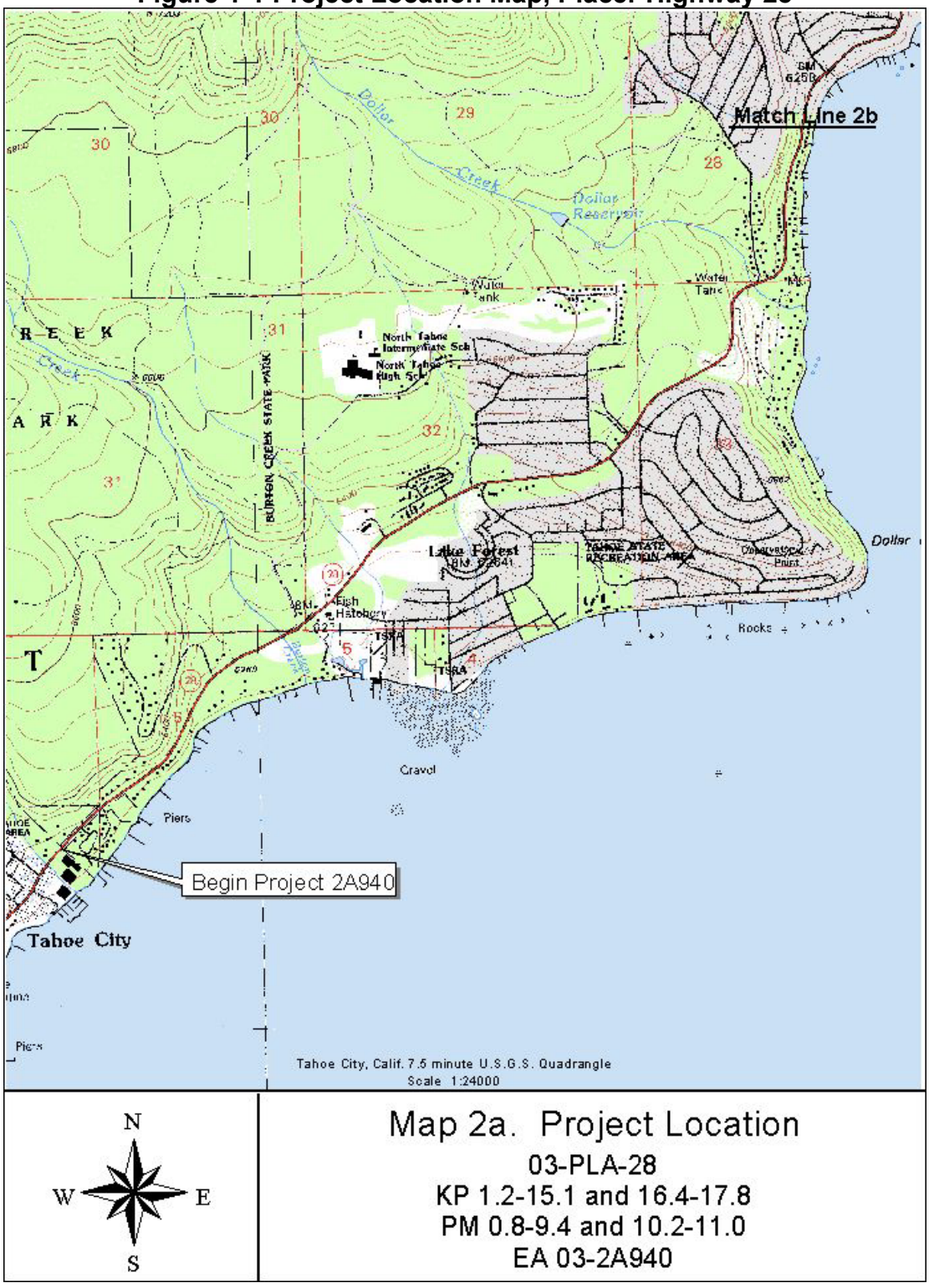


Figure 1-2 Project Location Map, Placer Highway 28

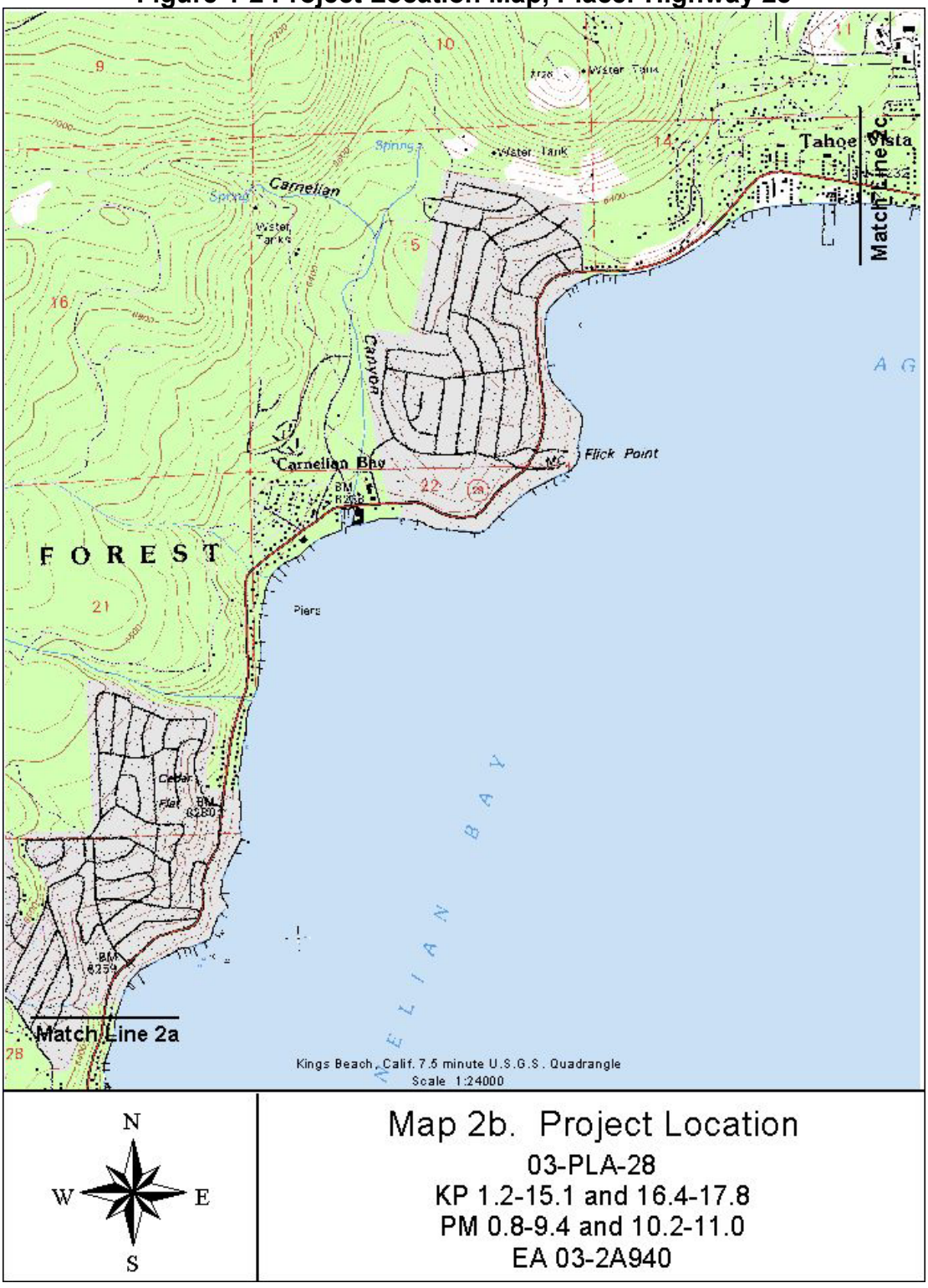


Figure 1-3 Project Location Map, Placer Highway 28

Chapter 2 Alternatives

2.1 Alternatives

One build alternative that includes all project features described in Chapter 1 is proposed for this project.

Alternative 1

This alternative would include improvements listed in Chapter 1. The section of highway between Estates Drive and Beach Street would remain as a four-lane segment. On-street parking would be prohibited between Estates Drive and Beach Street to provide room for bike lanes.

No Build Alternative

A no build alternative would lead to increased costs over time as the roadway ages and becomes increasingly difficult to maintain. In addition, the No Build Alternative will not address the water quality problem facing Lake Tahoe, which has lost an average of one foot of clarity each year, since the 1960's. Furthermore, benefits resulting from improvements to the Class II bike trail will not be achieved by the no build project. In general the No Build Alternative will have less potential to impact cultural resources, species and their habitats, wetlands, aesthetics and parklands. However, the No Build Alternative will not provide increased safety and will lead to increased maintenance needs over time. These maintenance needs are likely to result in increased traffic interruptions. Lastly, the No Build Alternative will not meet the purposes of the Lake Tahoe EIP.

2.2 Alternatives Comparison

The following table, Alternatives Comparison Table 2-1, compares Alternative 1 and the No Build Alternative.

Table 2-1 Alternatives Comparison

Alternative	Benefits	Impact
Alternative 1	Maintains capacity, provides left-turn pockets, increases shoulder space, increases storm water treatment, improves bicycle access, improves lighting, and provides a scenic turnout.	Impacts due to the project are listed in the Summary tables at the start of this report. This alternative will reduce shoulder parking.

2.3 Alternatives Considered and Withdrawn

During public open houses and meetings with resource agencies in the Tahoe Basin additional alternatives and alternative elements not included in this environmental document were discussed.

2.3.1 Roundabout at National Avenue

A traffic operations report was conducted to determine the feasibility of a roundabout at the SR 28 and National Avenue intersection. The analysis determined that a one-lane roundabout would not have enough capacity at the entries to service the westbound and eastbound volumes. Therefore a two-lane roundabout would be needed at National Avenue. A two-lane roundabout would require right-of-way takes from several properties at the intersection of SR 28 and National Avenue. The social and economic impacts and costs associated with the roundabout were determined to be prohibitive. A separate project is being developed to provide a traffic signal at National Avenue.

2.3.2 Alternative 1B

This alternative would include improvements listed in Chapter 1. The four lanes, from Estates Drive to Beach Street, would be striped to provide one westbound and two eastbound lanes. The fourth lane would be a two-way left-turn lane (TWLTL).

Anticipated benefits of this alternative are that it would provide left-turn pockets, provide a two-way left-turn lane between Estates Drive and Beach Street, increase

shoulder space, increase storm water treatment, improve bicycle access, provide refuge for pedestrian crossings, improve lighting, and provide a scenic turnout.

The project would have most of the same impacts as the proposed project (Alternative 1). In addition, the alternative would conflict with the Kings Beach and Tahoe Vista community plans, which require that at least 4 lanes of traffic be maintained on the highway.

2.3.3 Alternative 2

This alternative would include improvements listed in Chapter 1. In addition, from Estates Drive to Beach Street, the roadway would be reconfigured to one lane in each direction with a TWLTL. The shoulder would be 3.6 m (12 ft) to facilitate continuation of a bike lane and allow room for parallel parking. Parking would be prohibited where 3.6 m cannot be obtained.

Anticipated benefits of this alternative are that it would provide left-turn pockets, provide two-way left-turn lanes, increase shoulder space, increase storm water treatment, improve bicycle access, provide refuge for pedestrians and decrease the length of pedestrian crossings, improve lighting, and provide a scenic turnout. This alternative would also maintain parking from Estates Drive to Beach Street.

The project would have most of the same impacts as the proposed project (Alternative 1). However, the alternative would conflict with the TRPA LOS standard, due to anticipated level of service F between Estates Drive and Beach Street. In addition, the alternative would conflict with the Kings Beach and Tahoe Vista community plans, which require that at least 4 lanes of traffic be maintained on the highway.

Chapter 3 Affected Environment/Impacts, Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures

HUMAN ENVIRONMENT

3.1 Community Environmental Consequences/ Population and Housing

3.1.1 Affected Environment

The project area includes most of the North Shore of Lake Tahoe along SR 28. Heading east on SR 28, highway travelers parallel the Lake Tahoe shoreline and in succession pass through the unincorporated communities of Tahoe City, Lake Forest, Dollar Point, Cedar Flat, Carnelian Bay, Agate Bay, Tahoe Vista, Kings Beach, and Brockway.

Businesses in the communities primarily serve tourists. A study conducted by Dean Runyan Associates for the North Lake Tahoe Resort Association in 2003 found that visitors to the North Lake Tahoe area spent nearly $375 million in the year 2000. Tourists come to enjoy the lake in the summer and nearby ski resorts in the winter. Within the project area tourist oriented establishments include hotels, motels, vacation properties, restaurants, bars, and small specialty shops. In addition, just east of the project there are four casinos and a number of motels in the State of Nevada.

According to Year 2000 US Census data, the residents in the communities within the project limits are primarily white. However, the Hispanic population of Kings Beach is 50.2 percent of the total population, almost half of which is linguistically isolated. The larger part of this Hispanic community seems to be centered at the west end of the town to the north beyond the highway.

Year 2000 Census data also indicates the Kings Beach Hispanic community has by far the lowest per capita income among all other ethnic groups. Many in the community cannot afford an automobile and work in the hospitality-hotel industry across the Nevada border in Crystal Bay and Incline Village and use the Tahoe Area Regional Transit system to commute to work.

3.1.2 Regulatory Setting/TRPA Thresholds

Under CEQA, consideration of economic and/or social changes only occurs when they result in a physical change to the environment (CEQA Guidelines secs. 15064(f), 15382).

Under NEPA, the "human environment" encompasses social and economic impacts. Economic and social effects must be discussed if they are interrelated with natural or physical environmental effects (40 CFR sec. 1508.14). For example, if an economic or social effect causes a physical change to the environment or vice versa, then these economic and social effects will be discussed in the environmental document.

In addition, NEPA requires that to the fullest extent possible other laws be integrated into the NEPA process (40 CFR sec. 1502.25(a)). This requirement applies to Executive Order (EO) 12898 and the Civil Rights Act of 1964, both of which are applicable to community resources.

All projects with a federal action must comply with EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* signed by President Clinton on February 11, 1994. Executive Order 12898 directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2004, this was $18,850 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix C of this document.

3.1.3 Environmental Consequences

No substantial community impacts are anticipated pursuant to CEQA, NEPA or TRPA Code. There are many members of the Kings Beach Hispanic community who are linguistically isolated. A bilingual public information campaign has been identified as a measure that will inform members of the Kings Beach Hispanic community of potential traffic delays.

CEQA Considerations

No impacts to the community will cause a physical change due to this project. Therefore, no substantial impacts pursuant to CEQA are anticipated.

TRPA Considerations

There are no TRPA Thresholds directly relating to community impacts, population or housing. Section 12 of the TRPA Checklist addresses housing. The project will not alter the composition of housing in the area. Therefore, all responses on the Housing section of the TRPA Checklist were "No Impact."

NEPA Considerations

The project will not result in the acquisition of any homes or the permanent displacement of any residents. So, no impacts to population or housing are anticipated.

No segment of the population will be disproportionately impacted by construction. The community may experience impacts from construction such as traffic and transit service delays and increased noise and dust. A bilingual public information campaign will inform both the English and Spanish speaking residents of upcoming delays and potential disruptions. High and adverse impacts to the identified low-income Hispanic minority community that would trigger Environmental Justice (EJ) or Title VI protection are not expected. More details on traffic impacts are covered in Section 3.7. Construction noise impacts are covered in Section 3.16 and construction air quality impacts are covered in Section 3.10.

Avoidance, Minimization and/or Mitigation Measures

C1: A bilingual public information campaign to reach both the English and Spanish speaking members of the community.

3.2 Cultural Resources

3.2.1 Affected Environment

Generally, this area of the Sierra Nevada, adjacent to Lake Tahoe, is known to be extremely sensitive for prehistoric and historic resources and for Native American values.

No previously identified National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR) listed or eligible properties, State Historical Landmarks, or California Points of Historical Interest exist within the Area of Potential Effects (APE) for the proposed project. During this project effort, however, Caltrans staff identified one resource, the Bliss-Merrill House located at 2000 N. Lake Boulevard, Tahoe City, that appears eligible for listing in the NRHP under criterion C and is eligible for listing in the CRHR under criterion 3 at the local level of significance (period of significance: c. 1910-1929). Within a mile of the project at the west end are four National Register sites: Watson Log Cabin (built in 1908-1909), Lake Tahoe Dam and Outlet Gates (also State Historic Landmark No. 797), and the Gatekeepers Cabin (also a California Point of Historic Interest). Some additional archaeological sites were identified during field studies but are outside the APE.

The present routes of SR 28 and 267, as well as National Avenue follow approximately the same routes as a Washoe Paiute Indian trail and the Emigrant Trail. Earlier construction projects have destroyed any evidence of these resources within the APE. During the late 19th century, the lake abounded with hunting lodges and resorts, including the Tahoe Tavern (1901) and Grand Central Hotel (1871) in Tahoe City, and the Brockway Resort and hot springs (1869) near the northern terminus of the project. Some elements of the Brockway Resort remain but have been substantially altered.

The Truckee-Brockway Toll Road, which was built in 1869, approximately follows the same alignment as current SR 267. The 1866 General Land Office plat map shows a shoreline route similar to the alignment followed by the present Highway 28. The Shoreline Road (now SR 28) was originally built in 1928 to connect north shore communities.

The Native American Tribe known as the Washoe are the locally indigenous people of the Lake Tahoe Basin. The project area falls within the core of traditional Washoe territory. The territory at the time of Euro American contact stretched across approximately 4,000 square miles (10,360 km^2) from Honey Lake to the north to just south of Little Antelope Valley, and from the west slope of the Sierra Nevada into the Pine Nut Mountains of Nevada to the east. The Washoe originally seasonally used the Lake Tahoe Basin. The Washoe range however extended beyond this territory, with joint use by neighboring groups north to Pyramid Lake and westward into the Sierra Nevada foothills and adjacent Central Valley of California. This extended territorial range of seasonal exploitation totaled almost 10,000 square miles (25,900

km^2). Most of the major habitation centers and permanent settlements of the Washoe were located at elevations of about 4,500 feet in the Honey Lake, Washoe Lake, and Topaz Lake basins. Year round settlements were also located at somewhat higher elevations (roughly 5,500 feet) in the Woodfords and Markleeville areas.

Euro-American settlement began in the area during the 1860s, sparked to some degree by the discovery of silver at the Comstock Lode near Virginia City, Nevada, and the need for lumber to supply the mines. Logging operations so dominated land use in the Lake Tahoe basin that, by the 1890s, the forests were severely depleted. Concurrently, ore extraction at the Comstock slowed significantly. From this point onward, promotion of the natural beauties of Lake Tahoe started an influx of vacationers and tourists that continues to this day. The vast majority of the project area contains 20th century buildings associated with the tourist industry, such as vacation cottages, motels, restaurants, and convenience stores.

3.2.2 Regulatory Setting/TRPA Thresholds

Under California law, cultural resources are protected by the California Environmental Quality Act (CEQA), (CEQA Guidelines sec. 15064.5) as well as Public Resources Code Section 5024.1, which established the California Register of Historic Places.

The National Historic Preservation Act (NHPA) sets forth the national policy and procedures regarding "historic properties." Section 106 of NHPA requires federal agencies to consider the effects of their undertakings on such properties, following Implementing Guidelines issued by the Advisory Council on Historic Preservation (36 CFR 800).

The TRPA Initial Environmental Checklist (IEC) identifies issues that may be deemed significant pursuant to TRPA Code. These issues include alteration of a significant archaeological or historic site, adverse effects to a prehistoric or historic building, structure or object, physical changes that would affect unique cultural ethnic values, or restriction of historic or pre-historic religious or sacred uses within the impacted area.

3.2.3 Environmental Consequences

Caltrans' cultural resources staff identified one eligible resource during project field studies: the Bliss-Merrill House at 2000 N. Lake Boulevard, Tahoe City. The

residence and an associated cottage originally occupied a parcel located approximately one quarter-mile south of its present site, but were moved during the 1960s in response to encroaching commercial development. Secondary dwellings and a tennis court also exist on the parcel; however, the modern structures do not contribute to the setting of the historic house and cottage. In consideration of these facts, the boundary for the resource is defined as the cleared area surrounding the main house, cottage, and a small, modern shed. A basin proposed at this site would be located adjacent to the roadway, outside of the boundary for the historic resource, and would be screened from view by existing mature vegetation. Further, the basin would not result in changes to noise or vibration levels in the vicinity of the resource. The proposed project, therefore, no impacts on cultural resources pursuant to CEQA, NEPA or TRPA Code.

If cultural materials are encountered during the project construction, Caltrans policy requires that work in the area must immediately halt until a qualified archaeologist can evaluate the nature and significance of the material and determine an appropriate course of action in consultation with the State Historic Preservation Office (Caltrans Environmental Handbook, Volume 2, Chapter 1, Sections 1-2.2 and Chapter 7 Section 7-9).

3.3 Agricultural Resources

3.3.1 Affected Environment

The project will not impact areas listed as prime, unique farmland, or farmland of statewide importance and, therefore, is in compliance with the California Department of Conservation farmland mapping and monitoring program. No anticipated effects from this project would conceivably change the existing environment in such a manner as to convert farmland in the surrounding area to non-agricultural use.

3.3.2 Regulatory Setting/TRPA Thresholds

Not Applicable.

3.3.3 Environmental Consequences

None.

3.4 Growth Inducement

3.4.1 Affected Environment

The project will not create additional capacity or add new access to undeveloped land and will not induce growth.

3.4.2 Regulatory Setting/TRPA Thresholds

Not applicable.

3.4.3 Environmental Consequences

None.

3.5 Land Use

3.5.1 Affected Environment

Land uses within the project limits include a mixture of both residential and commercial. Commercial operations include hotels, motels, vacation properties, bars, and small specialty shops. In addition, some publicly held open space and recreational properties exist. More specific information on land uses in the project area can be found in Table 3-1 Project Area TRPA Plan Areas. Maps of the TRPA Plan Areas are located at http://www.trpa.org/PlanArea/PlanArea.htm.

Table 3-1 Project Area TRPA Plan Areas

Plan Area	Primary Use	Existing Uses	Built	Maximum Densities
Rocky Ridge (#005)	Residential	Lake Front Homes, Rocky Ridge Subdivision, motel	90%	SFR (1 unit per parcel) Tourist Accommodation (varies)
Fish Hatchery (#006)	Recreation	Public Facilities, US Coast Guard Post, Abandoned State Fish Hatchery	N/A	SFR (1 unit per parcel) Recreation (8 Sites per acre)
Lake Forest Glen (#007)	Residential	Residential Condominiums, Commercial	90%	SFR (1 unit per parcel) MFR (15 units per acre)
Lake Forest (#008)	Residential	Mixed Residential, Extensive Shoreline	90%	SFR (1 unit per parcel) Tourist Accommodation (10 units per acre)
Lake Forest Commercial (#009A)	Commercial, Public Service	Commercial/ Industrial	90%	SFR (1 unit per parcel) MFR (15 units per parcel) Employee Housing, Tourist Accommodation
Dollar Hill (009B)	Commercial, Public Service, Affordable Housing	Commercial, Undeveloped Parcels	15% Office and Retail	SFR (1 unit per parcel) MFR (15 units per acre) Nursing/Personal/Resident Care (25 units per acre)
Dollar Point (#010)	Residential	Low Density Residential, Condominiums, Extensive Shoreline	85%	SFR (1 unit per parcel)
Highlands (#011)	Residential	Low Density SFR Subdivision	75%	SFR (1unit per parcel) MFR (15 units per parcel)
North Tahoe High School (#012)	Recreation	Recreation Undeveloped Land	N/A	SFR (1 unit per parcel), Campgrounds (8 sites per acre, Group Facilities (25 per acre)
Carnelian Woods (#016A)	Residential	Condominium Development	75%	SFR (1unit per parcel)
Carnelian Bay Subdivision (#016B)	Residential	Older Residential Area, Shoreline	75%	SFR (1 unit per parcel)
Flick Point/Agate (#018 Bay)	Residential	Low Density SFR, Shoreline	80%	SFR (1 unit per parcel)
Tahoe Estates (#021)	Residential	Older Low Density Residential	60%	SFR (1unit per parcel)
Tahoe Vista Subdivision (#023)	Residential	Low Density Residential, Motels	65%	SFR (1 unit per parcel)

Plan Area	Primary Use	Existing Uses	Built	Maximum Densities
Snow Creek (#024B)	Recreation	Undeveloped Subdivisions	N/A	SFR (1unit per parcel) Campsites (8 sties per acre)
Woodvista (#027)	Residential	Older SFR Development, Golf Course	65%	SFR (1unit per parcel)
Kings Beach Residential (#028 not within project limits)	Residential	Residential/ Commercial Mix Designated Preferred Affordable Housing Area	75%	SFR (1unit per parcel) MFR (15 units per parcel) Mobile Home (8 units per acre)
Brockway (#031)	Residential	Mixed Residential (Condominiums, SFR)	75%	SFR (1 unit per parcel) Tourist Accommodation (10 units per acre)
Crystal Bay (#034 not within project limits)	Residential	Older Low Density SFR, Shoreline, Outside of Casino Strip	50%	SFR (1 unit per parcel)

Source: Tahoe Regional Planning Agency, TRPA Plan Area Statements Note: SFR = Single-family Residential and MFR = Multi-family Residential

3.5.2 Regulatory Setting/TRPA Thresholds

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include the division of an established community, conflicts with land use plans, policies or regulations, and conflicts with Habitat Conservation Plans. In addition, CEQA Guidelines section 15063 (d)(3) requires, "an examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls."

Under NEPA, any discrepancy with State or local plans or laws should be discussed (40 CFR 1506.2(d)).

TRPA requirements for land uses are contained in Plan Area Statements. The Plan Area Statements describe allowable uses and densities of development within the Tahoe Basin. Maximum densities of development for the project area are located in Table 3-1 above.

3.5.3 Environmental Consequences

The potential exists for both temporary and permanent impacts to approximately 60 privately owned parcels. Impacts to public parcels owned by the North Tahoe Public

Utility District, Placer County, State Parks, United States Forest Service and California Tahoe Conservancy are also anticipated.

Impacts to parcels will occur as a result of planned drainage outfalls to the lake, infiltration basins, detention basins, bio-swales, scenic turnouts, driveways, intersection improvements, construction staging areas, access roads, bikeways and sand collection vaults. Project features and the parcels that will be impacted are included on mapping in Appendix B.

CEQA Considerations

No properties will lose their intended use because of the project. No residents or businesses will be displaced. The project will be consistent with existing zoning, plans, and other applicable land use controls. Therefore, no significant impacts to land use pursuant to CEQA are anticipated.

TRPA Considerations

The project will not change the type or concentration of land uses in the area and is therefore consistent with TRPA Plan Area Statements.

NEPA Considerations

No properties will lose their intended use due to the project. No residents or businesses will be displaced. Therefore, no substantial impacts to land use pursuant to NEPA are anticipated.

3.6 Recreation

3.6.1 Affected Environment

A number of publicly held recreational properties exist within the project limits. Table 3-2 identifies each of these properties and the agency that has jurisdiction over them.

Table 3-2 Public Recreational Properties

Resource	Agency with Jurisdiction
Tahoe State Recreation Area (PUD)	California State Parks
Burton Creek State Park	California State Parks
Unnamed Beach Access	California Tahoe Conservancy
Lake Forest Campground	Tahoe City Public Utility District (PUD)
Robert Pomin Park	Tahoe City Public Utility District
Skylandia Park and Beach	Tahoe City Public Utility District (PUD)
Lake Forest Beach	North Tahoe Public Utility District (PUD)
North Tahoe Regional Park	North Tahoe Public Utility District (PUD)
Patton Beach	Placer County
Moon Dunes Beach	Placer County
Secline Beach	Placer County
National Avenue Beach	Placer County
Agatam Beach	Placer County

In addition, the North Tahoe PUD Parks and Recreation Department maintains a bike trail for a total of 4 kilometers (two and one-half miles) that extends from the beginning of the project at KP 1.2 (PM 0.8) and ends at Dollar Hill KP 4.7 (PM 2.95).

Dispersed recreational activities occur throughout the project limits on additional publicly held parcels. These activities include hiking, cross country skiing, and dog walking.

3.6.2 Regulatory Setting/TRPA TRPA Thresholds

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include the possible increase in the use of existing parks resulting in accelerated deterioration, and the adverse physical effects from the construction of new or altered recreational facilities.

Federal protection of recreational resources is provided under Section 4(f) of the Department of Transportation Act of 1966. Section 4(f), codified in Federal law at 49 U.S.C. 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

There are two TRPA thresholds for recreation:

- R1-It shall be the policy of the TRPA governing body in development of the regional plan to preserve and enhance the high quality recreational experience, including preservation of high quality undeveloped shorezone and other natural areas. In developing the regional plan, the staff and governing body shall consider provisions for additional access, where lawful and feasible, to the shorezone and high quality undeveloped areas for low density recreational uses.

- R2-It shall be the policy of the TRPA governing body in development of the regional plan to establish and ensure a fair share of the total basin capacity for outdoor recreation is available to the general public.

3.6.3 Environmental Consequences

No substantial impacts to recreational resources pursuant to CEQA, NEPA or TRPA Code are anticipated. An analysis prepared pursuant to Section 4(f) is included in Chapter 7 of this document. See Chapter 7 for details on impacts pursuant to Section 4(f). See Section 3.7.3 for impacts related to parking and recreation areas.

CEQA Considerations

Physical changes to the recreational areas will not reduce the recreational opportunities in the project vicinity. In addition, the project will not induce increased deterioration of recreational resources. No significant impacts are anticipated.

TRPA Considerations

The project will not reduce recreational opportunities in the Basin. Therefore, the project is consistent with the recreation thresholds R1 and R2.

The project will enhance recreational opportunities around the lake by including EIP project 762. Project 762 includes the striping of the shoulder to provide a Class II Bike Lane from Dollar Drive to the Nevada State line.

NEPA Considerations

No properties will lose their intended use due to the project. During construction there will be some delay in reaching some recreational opportunities. In addition, construction noise may be a nuisance. However, these impacts are not anticipated to substantially reduce the enjoyment of or access to recreational opportunities.

3.7 Transportation and Traffic

3.7.1 Affected Environment

The current Highway 28 includes a number of driveways and minor local road intersections with and without left-turn pockets. Highway 28 is 2 lanes (one in each direction) from Tahoe State Park to Estates Drive. From Estates Drive to Beaver Street, in Kings Beach, the highway is 4 lanes. From Beaver Street to the Nevada Stateline there are 2 lanes of traffic. Two-way continuous left-turn lanes exist from Lake Forest Drive to Dollar Hill 2 KP 3.91 - 4.22 (PM 2.43 – 2.62), Center Street KP 9.24 (PM 5.74) to KP 9.87 (PM 6.13) and from KP 14.23 (PM 9.18) to SR 267 KP 15.03 (PM 9.34).

Highway 28 is the only north shore thoroughfare that runs the course of the north part of the lake. There are no alternative routes that connect the north shore tourist and resort/casino communities together.

Table 3-3 below shows existing and projected traffic volumes for 2003, 2008 and 2028 for Highway 28. According to the table, the highest peak hour traffic existing and projected are west of SR 267 KP 14.8 (PM 9.2) and at Stateline KP 17.8 (PM 11.0).

Table 3-3 Existing and Projected Traffic Volumes on Placer Highway 28

Post mile	Location on State Route 28	Year 2003 Volumes		Year 2008 Volumes		Year 2028 Volumes	
		Peak Hr.	ADT	Peak Hr.	ADT	Peak Hr.	ADT
PM 0.8/ KP 1.3	Tahoe State Park	1697	19067	1846	20741	2483	27899
PM 5.8/ KP 9.3	At Carnelian Bay Rd.	1359	14612	1478	15892	1954	21011
PM 7.8/ KP 12.6	At Estates Dr.	1669	18141	1815	19728	2399	26076
PM 8.3/ KP 13.4	West of National Avenue	1725	18157	1887	19863	2489	26200
PM 8.3/ KP 13.5	East of National Avenue	1813	19084	2005	21105	2638	27768
PM 8.8/ KP 14.2	At Agatam Ave.	1924	20252	2092	22021	2766	29116
PM 9.2/ KP 14.8	West of State Route 267	2144	22568	2251	23694	3082	32442
PM 10.3/ KP 16.5	W. of Chipmunk St.	1913	21252	1947	21633	2400	26667
PM 11.0/ KP 17.8	Stateline	2407	19358	2450	19701	3030	24367

ADT = Annual Average Daily Traffic

Accidents within the study area were queried from the Caltrans Traffic Accident Surveillance and Analysis System (TASAS) Table B over the past three available years. Table 3-4 compares actual accident data on selected segments of Highway 28 to the statewide average for similar facilities. In the three-year period from October 1, 2000 to September 30, 2003, there were 195 accidents in the segment from KP 1.2 to 15.0 (PM 0.8 to 9.43). For the same time period the segment of highway from KP

16.5 to 17.7 (PM 10.3 to11.0) experienced a total of 15 accidents. There were three fatal accidents within the project limits in the past three years. In general, Highway 28 experiences less fatality and injury accidents than the State average per million vehicle miles traveled. However, the segment between PM 0.8 and 9.4 experiences a greater frequency of total accidents (113%) than the State average. The accident rate is only slightly higher than average. The higher than average accident rate may be partly explained by the number of tourists inexperienced at driving in the area, the high number of access points on SR 28, and the icy/snowy conditions prevalent in the winter. The proposed operational improvements should help to reduce the accident rate.

Table 3-4 Accident Levels on Placer Highway 28

Location	Actual			Average			Actual/Average		
	FAT	F+I	TOT	FAT	F+I	TOT	FAT	F+I	TOT
PM 0.8 (KP 1.3) to PM 9.3 (KP 15.0)	**0.024**	**0.56**	**1.58**	**0.031**	**0.65**	**1.40**	**0.77**	**0.86**	**1.13**
PM 10.2 (KP 16.4) to PM 11.0 (KP 17.7)	**0.000**	**0.53**	**1.14**	**0.035**	**0.84**	**1.68**	**0.00**	**0.63**	**0.68**

FAT = Fatality Accidents, F+I = Fatality and Injury Accidents, TOT = Total Number of Accidents (fatal, injury, and property damage only); FAT, F+I and TOT numbers in the table represent the number of incidents per million vehicle miles traveled; Actual/Average = Percentage versus the Average

Transit service in the project area is operated by Tahoe Area Regional Transit (TART). Both buses and trolleys run along the Highway 28 corridor within the project limits. From Tahoe City to the California/Nevada border there are 23 stops eastbound and 26 stops westbound. According to TART, rider ship numbers are up to 280,000 annually. The north shore segment of TART gets extensive use. The system runs from 6:00 AM to 12 Midnight daily. TART has estimated that 85 percent of its rider ship is commuter oriented, with 15 percent being tourism-consumer oriented.

The North Shore of Tahoe is part of the Tahoe Truckee Unified School District. The school district has three schools in the project area: an elementary and a middle school/high school located in Tahoe City and another elementary school in Kings Beach. There are 41 school bus stops along the Highway 28 corridor. As stated earlier, there is no alternative route connecting the neighboring communities. Adequate functioning of the school bus system requires that school children be picked up and left off at a place that is at, or near, a regular stop, from which they may proceed safely. Careful staging of construction to help avoid impacts to the morning and afternoon school bus routes/stops will be a consideration. Coordination with the School District Transportation Department is expected.

Currently, throughout the project limits informal/undesignated parking on the shoulder can be observed. Most businesses, including a number of resorts and motels, offer their own parking areas. At times the shoulder area does provide overflow parking for the resorts and motels in the vicinity.

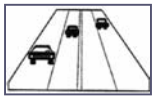
Private residences also use the highway shoulder for parking. There are a number of sloped driveways to individual residences that use a "parking pad" up off the driveway that intrudes on the current paved shoulder to avoid having to back out of the driveway.

Many residences are also used as seasonal rentals. These units often times do not have enough parking to service the seasonal short term renters who bring multiple vehicles to the lake with them. Guests find themselves using the "parking pad" on, or near, the current paved shoulder. During the snow season residents and guests tend to use the "parking pad" or shoulder area to avoid traction problems from a steep driveway.

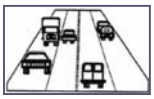
3.7.2 Regulatory Setting/TRPA Thresholds

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include substantial increases in traffic relative to existing load and capacity, exceeding a Level of Service (LOS) standard (see Figure 3-1), changes in air traffic patterns, substantially increased hazards, inadequate emergency access, result in inadequate parking capacity or conflict with adopted alternative transportation plans, policies, or programs.

Figure 3-1 Level of Service



LOS A – Free Flowing Conditions.



LOS B – Speeds at or near free-flow speed, but presence of other users begins to be noticeable.

LOS C – Speeds at or near free-flow speed, but freedom to maneuver is noticeably restricted.

LOS D – Conditions where speeds begin to decline slightly with increasing flow; Freedom to maneuver more restricted.

LOS E – Operating conditions at or near roadway capacity. Even minor disruptions to the traffic stream can cause delay.

LOS F – Breakdown in vehicle flow. Queues form quickly behind point in the roadway where the arrival flow rate temporarily exceeds the departure rate.

The concept level of service in planning documents for SR 28 is LOS F based on the 1997 SR 28 Transportation Concept Report prepared by Caltrans, LOS D for the 1996 North Lake Tahoe General Plan, and LOS D for the 2001 TRPA Regional Tranportation Plan.

The FHWA directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Caltrans and FHWA are committed to carrying out the 1990 Americans with Disabilities Act (ADA) by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

The IEC aids in identifying potential significant impacts pursuant to TRPA Code. Potential impacts include the generation of additional vehicle trips, changes to parking facilities or the demand for these facilities, changes to existing transportation systems, alterations to circulation patterns, alterations of waterborne, rail or air traffic, or the increase in traffic hazards to motor vehicles, bicyclists or pedestrians.

3.7.3 Environmental Consequences

Both construction and permanent impacts from the proposed project are anticipated. Permanent impacts will be in the form of reduced parking between Estates Drive and Beach Street with Alternative 1. Temporary impacts will be in the form of traffic delays and inconvenience from roadway construction.

Post-project LOS Comparison

The LOS will be identical for Alternative 1 and the No Build Alternative. The project is anticipated to result in some improvements in level of service due to the additional shoulder space, two-way left-turn lanes, and left-turn pockets. However, the software used to predict future traffic levels does not account for additional shoulder space, two-way left-turn lanes, and left-turn pockets. Therefore, although it can be

qualitatively stated that level of service will improve no quantitative data is available to show the benefit of these improvements versus the No Build Alternative in 2028.

Parking

All Class II bike lanes will be striped, marked and designated as a bike lane. Vehicle and bicycle travel lanes will take precedent over parking in Caltrans right-of-way. The bike lane will require 1.2 m (4 ft) in areas without a curb and 1.5 m (5 ft) in areas with a curb. The shoulders must be at least 3.6 m (12 ft) to allow for the shoulder and the bike lane. Where the shoulder width of 3.6 m (12 ft) cannot be obtained, parking will generally not be permitted. It is expected that the necessary amount of shoulder widening will not be possible near a number of lakeside frontage properties that currently use the dirt and paved shoulder area for parking.

In addition, the minimum 3.6 m (12 ft) is not available in most areas from Estates Drive to Beach Street. Undesignated parking on the shoulder would be curtailed on the stretch of highway from Estates Drive to Beach Street. Some of the undesignated shoulder parking is expected to be replaced by designated-signed parking areas.

Loss of shoulder parking due to implementation of the project is expected to be noticed most at "beach access areas." Some of the undesignated parking that currently occurs along the shoulder areas on the lakeside of the segment is obtrusive and irregular. At times boat trailers and large vehicles can be observed parked in spots impinging on the highway pavement and bike/pedestrian path areas. Under implementation of the four-lane alternative, as parking is delineated, it is expected that the areas near the boat launch (PM 8.55/KP 13.76) and in proximity of Moon Dunes Beach will be affected the most. There will be some loss of parking at the kayak/bicycle rental business (located on the north side of the highway at PM 8.1).

Some of the loss of current undesignated parking is expected to be off-set by two local projects. One NTPUD project will provide a legal parking lot area east of National Ave. Also the North Tahoe Beach Reconstruction Project will provide a parking lot for beach access parking at PM 9.2/KP 14.81.

Table 3-5 summarizes the parking impacts. Parking impacts with the No Build Alternative assume that a Class II bike lane will not be striped.

Table 3-5 Parking Impacts

No Build	Alternative 1
1) Parking in shoulders will continue as is. 2) Parking will occur sporadically throughout the project limits except where specifically designated as illiegal.	No parking in areas with less than 12 ft. of shoulders.

Temporary Construction Impacts

During construction, impacts will include reduced vehicle throughput due to fewer available traffic lanes, and reduced access to properties due to lane closures, sidewalk construction, and driveway adjustments. Construction on the project is expected to take place over two consecutive summer seasons during the period of May 1st to October 15th. One lane will be kept open in each direction, throughout the project limits, during daylight hours between July 4th and Labor Day. Work that takes place in the travel way on the two-lane section of the project (PM 0.8/KP 1.29 - PM 7.8/ KP 12.55, PM 10.2/KP 16.42 -11.0/KP 17.7) will be done at night (generally 8:00 PM to 7:00 AM). Work along the four-lane portion of the project (PM 7.8/KP 12.55 – 9.4/15.13) will be done during daylight hours with at least one lane open in each direction.

Some experience and comparisons can be drawn from the RRR project on which work was done between July 9th and October 15th of 2000 on the same stretch of highway. The work involved the repaving of the traveled way only. Work was done at night with one-way lane closures of up to one mile. Delays were the most severe at the far west end of the project at the edge of Tahoe City and at the far east end at the Kings Beach/Stateline area. Delays at these points were up to one-half hour. The longer delays occurred between the construction time frame of 8:00 PM to 12 Midnight.

Delays after midnight during the RRR project were much less as traffic volumes were much lighter. In high volume areas, work was stopped as early as 5:00 or 6:00 AM, so that the potential impact to the early morning commute was reduced.

Local transit ran off schedule during the evening hours. There were complaints, particularly from local nighttime businesses, that sales were down since people were staying away because of the long delays.

Some of the same impacts are expected with the currently proposed project, though the lane closures are expected to be shorter (less than one mile/ 1.6 kilometers).

Due to existing traffic volumes and the amount of seasonal activities in the area, more than routine procedures will need to be put in place to minimize potential impacts.

CEQA Considerations

Impacts with both alternatives will primarily occur during construction. Delays during construction may cause inconvenience but are not expected to be significant. In addition, minimization measure T1 is provided below to reduce the impact during construction.

The project will result in less parking throughout the project. The project is not anticipated to result in an inadequate supply of parking. Therefore, the impact is not considered to be significant.

The No Build Alternative will not include additional CTWLTLs or left-turn pockets (operational improvements), both of which will provide some benefit to LOS. In addition, bicycle access will not be improved, as it would with the project.

TRPA Considerations

The project will provide improved bicycle and pedestrian access through its limits and will maintain level of service comparable to the No Build alternative according to traffic models. In addition, TWLTL and left-turn pockets will provide operational improvements versus the No Build alternative. The project will improve pedestrian access from Estates Drive to Beach Street. The project will not increase capacity and is not anticipated to attract additional traffic. Some on-street parking will be eliminated to provide room for bike lanes.

The No Build Alternative will not provide operational improvements or increased bicycle access.

NEPA Considerations

As stated above, the project will aid pedestrian/bicycle access but will have construction related impacts. The project will result in reduced parking. The No Build Alternative will not include additional operational improvements. In addition, bicycle access will not be improved, as it would with the build alternative.

Avoidance, Minimization and/or Mitigation Measures

T1: The impact of construction on traffic on Highway 28 will be reduced by providing travelers/residents advanced warning of work activities and taking measures to keep facilities open during construction. Caltrans will work with the contractor on staging and coordinating construction activities in a manner that would minimize the duration and frequency of work adjacent to businesses and residences. Whenever possible, work in front of businesses will be staged, so as to not coincide with peak hours of the business. Caltrans will work with the contractor to ensure that all businesses with multiple driveways will be allowed to have at least one unimpeded driveway during construction. In areas where curb and gutter improvements are being done and only one driveway exists, efforts will be made to accomplish the work outside of normal business hours while allowing continued access whenever possible. Work on driveways greater than 3.65 meters (12 feet) can be constructed one-half width at a time, thereby maintaining access during construction. Driveways narrower than 3.65 meters (12 feet) will require closure during construction. Caltrans will attempt to keep cold planning and paving at cross streets and driveways to no greater than 30 minutes to maintain accessibility.

Advanced notice of the project may be provided through local TV stations, commercial radio stations, newspapers, public meetings, flyers, handouts, telephone, personal contact, newsletters, the California Highway Information Network (1-800-427-ROAD), Highway Advisory Radio, and Portable Changeable Message Signs. The Internet is also a source of information for Caltrans projects. Weekly road improvements and planned lane closures are listed at http://www.dot.ca.gov/dist3/d3press and at http://www.dot.ca.gov/hq/roadinfo/hi.htm. Incidents are also found on the California Highway Patrol website at http://cad.chp.ca.gov/default.asp. Current road information can also be accessed by calling "511."

If complete road closures are necessary, then detours will be provided. Detours will be posted at least two hours in advance. Pedestrian/bicycle access will be provided

through construction zones. If a pedestrian zone is closed, then signing will be provided to direct pedestrians to alternate routes.

3.8 Utilities and Service Systems

3.8.1 Affected Environment

Utilities owned by Sierra Pacific Power (Electric), Southwest Gas (Gas), AT&T (Fiber), Charter Communications (Cable TV), NTPUD (Water and Sewer), TCPUD (Water and Sewer), Agate Bay Water Company (Water), FultonWater Company (Water), Tahoe Park Water Company (Water), and SBC (Telephone) are located within the project limits.

The North Tahoe Fire Protection District provides fire protection and medical services throughout the Highway 28 corridor. Stations are located in Tahoe City, Carnelian Bay, and Kings Beach.

Law enforcement is provided by Placer County Sheriff's office, which operates a substation in Tahoe City. The California Highway Patrol also provides enforcement along Highway 28. The nearest CHP office and dispatch center is located in Truckee.

3.8.2 Regulatory Setting/TRPA Thresholds

None.

3.8.3 Environmental Consequences

All utilities will be notified prior to construction. All utility work will be done within the limits of the proposed right-of-way. No impacts are anticipated.

Caltrans Traffic Management Plan will require that emergency vehicles be allowed to adequately pass through or around a construction site. During the rehabilitation project by Caltrans on Highway 28, completed in 2000, emergency services including law enforcement and fire were able to respond and function adequately.

3.9 Aesthetics

3.9.1 Affected Environment

The proposed project is located in the scenic Lake Tahoe Basin of northern California. The region is internationally known for its picturesque natural setting and year-round recreational attractions.

The project site is located in a region characterized by mountainous alpine terrain, typical of the Tahoe Basin. The physical environment is composed of forested upland areas, small creeks and drainages, granitic rock faces and outcroppings and high elevation meadow complexes.

The project is located in an area characterized by "Sierra Nevada Montane" vegetative communities. Upland overstory vegetation is composed primarily of Ponderosa pine (*Pinus ponderosa*), Jeffery pine (*Pinus jefferryi*) and white fir (*Abies concolor*). Understory plant species are primarily bush chinquapin (*Chrysolepiss semprivirens*), green-leaf manzanita (*Archtostaphlos patula*) and mountain snowberrry (*Symphoricarpus rotundifolius*). Common riparian vegetation is primarily white Alder (*Alnus Rhombifolia*), black cottonwood (*Populus trichocarpa*) and various willow (*Salix spp.*) species. Many large trees exist along the roadside throughout the project limits. Native vegetation provides a critical component that ties the roadside to the surrounding landscape pattern. It also provides an important buffer that benefits both the landowner and motorist by screening undesirable views and buffering noise.

As with many locations along this segment of SR 28, the motorist is exposed to views of the surrounding mountain landscape and Lake Tahoe. Uninterrupted views of the lake from roadway vantage points are intermittent along this segment of highway but exhibit high visual resource value as they add to the traveling motorists experience when traveling through the basin. Due to the high value of the visual resources, the section of SR 28 within the project limits Caltrans has determined that this segment of highway is eligible for designation as a State Scenic Highway. At this time no local agency has nominated or created scenic guidelines for this section of SR 28 for designation as a State Scenic Highway.

Land use patterns adjacent to the roadway throughout the majority of the project limits are made up of mountain rural, residential and commercial development. Scenic and architectural quality of development through the corridor varies from high

quality to cluttered and architecturally disjointed. Only small segments of roadway are not interrupted by developed structures. Terrain and vegetation help to break-up and disguise much of the development from roadway vantage points through residential areas. Most views of the lake from the motorist's vantage point are blocked or interrupted by shoreline development occurring on the lakeside of the roadway. Views of the lake are most accessible at Carnelian Bay, Flick Point, Tahoe Vista and Kings Beach. The roadway through extended segments of this project is also visible from Lake Tahoe and adjacent properties.

TRPA Scenic Resources

Any Visual Impact Assessment prepared for roadway projects in the Tahoe Basin must consider the TRPA Scenic Resource Inventory. TRPA has inventoried and rated roadway segments throughout the basin to determine scenic resource values from roadway vantage points. Each roadway unit is given a numerical threshold rating based on a scoring system. Generally, TRPA requires that the numerical threshold for each roadway unit be maintained or improved based on 1982 values. Table 3-6 TRPA Roadway Units lists all roadway units within the limits of the proposed project.

Table 3-6 TRPA Roadway Units

Roadway Units	2001 Composite Threshold Value	Threshold Attainment	Non-Attainment Cause
Roadway Unit #15: Tahoe City	16.5	Yes	
Roadway Unit #16: Lake Forest	16.5	Yes	
Roadway Unit #17: Cedar Flat	15.5	No	Threshold drop since 1982, Loss of lake views resulting from residential development
Roadway Unit #18: Carnelian Bay	15.5	Yes	
Roadway Unit #19: Flick Point	15.5	Yes	
Roadway Unit #20A: Tahoe Vista	13	No	Loss of lake views resulting from new lakeside structures
Roadway Unit #20B: Kings Beach	12.5	No	Developed structures, Roadway distractions
Roadway Unit #20C: Brockway	16	Yes	

Note: To secure threshold attainment, all travel routes with a 1982 score of 15.5 (roadway) or greater must maintain those scores, and all travel routes with a score of 15 (roadway) or less must improve their scores until the threshold score is reached. For example Unit #17 has a travel route rating of 15.5 that is high enough to be in attainment, but since it is lower than the 1982 value it is considered not in attainment. The Composite Threshold Values in Table 3-7 are equivalent to the travel route ratings discussed in Section 3.9.2.

Furthermore, TRPA has inventoried and rated shoreline travel routes throughout the basin to determine scenic resource values from vantage points from the Lake. Each shoreline unit is given a numerical threshold rating based on a scoring system similar to that of the roadway units (see bullet SR-1 below). Again, TRPA requires that the numerical threshold for each shoreline unit be maintained or improved based on 1982 values.

3.9.2 Regulatory Setting/TRPA Thresholds

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. To further emphasize this point, the Federal Highway administration in its implementation of NEPA [23 U.S.C. 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities." [CA Public Resources Code Section 21001(b)]

A Scenic Highway Program was created by the California Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change, which would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq.

The following TRPA Thresholds apply to scenic resources:

- SR-1 Travel Route Rating: The travel route rating threshold tracks long-term, cumulative changes to views seen from major roadways in urban, and natural landscapes in the region and to the views seen from Lake Tahoe looking toward shore. To secure threshold attainment, all travel routes with a 1982 score of 15.5 (for roadway units) or 7.5 (for shoreline units) or greater must maintain their scores, and all travel routes with a 1982 score of 15 (roadway) or 7 (shoreline) or less must improve their scores until the score is reached.

- SR-2 Scenic Quality Rating: The scenic quality rating threshold protects specific views of scenic features of Tahoe's natural landscape that can be seen from major roadways and from the lake. To secure threshold attainment, all 1982 scenic quality scores must be maintained.

- SR-3 Public Recreation Areas and Bike Trails: The public recreation area threshold protects the view shed from public recreation areas and certain bicycle trails. To secure threshold attainment, all 1993 scenic quality scores must be maintained.

- SR-4 Community Design: The community design threshold is a policy statement that applies to the built environment. Design standards and guidelines found in the Code, the Scenic Quality Improvement Program, and in the adopted Community Plans provide specific implementation direction. To secure threshold attainment, design standards and guidelines must be widely implemented to improve travel route ratings and produce built environments compatible with the natural, scenic, and recreational values of the region.

3.9.3 Environmental Consequences

The following impacts to scenic resources are anticipated:

- Views will be altered by the project. Elevated roadway views of the surrounding undisturbed forested area below will potentially be impacted as a result of basin, bio-swale, and roadway construction. Vegetation that currently acts as a visual buffer to adjacent properties will be removed.

- Views from the lake may be altered by the project. Vegetation that currently acts as a buffer between SR 28 and the Lake will be removed in order for the new water quality improvement structures to be built. As a result some of the new structures will be visible from the Lake.

- Vegetation removal will occur. New sediment basins (bio-swales and infiltration basins), access roads and associated drainage facilities (culverts, sand collection vaults, and outfalls) may require extensive vegetation removal. Extensive removal of native vegetation resulting from cut slope construction and rock slope protection (RSP) placement will occur.

- The existing terrain will be altered. Rock scaling and excavation work on slopes could alter natural existing geological formations. Basins, bio-swales and roadway construction will require grading and alterations to existing terrain.

- Developed structures, including drainage facilities such as culverts and other galvanized steel/concrete features, will be introduced to the existing environment. Roadway signage installation may introduce additional metallic surfaces that increase glare against the natural setting. Newly installed maintenance access roads adjoining SR 28 will increase roadside distractions.

CEQA Considerations

Project features are anticipated to blend in with the natural environment, while not diminishing views of aesthetic resources in the area. The impact of the project on the aesthetic environment will be less than significant with the incorporation of the avoidance and minimization measures listed below.

Highway 28 is eligible but not designated as a State Scenic Highway. Therefore, no impacts to a designated Scenic Highway will occur.

TRPA Considerations

The project features will not reduce a Travel Route or Shoreline Rating, nor will views of scenic resources be diminished. Measure V1 will ensure that impacts to existing views are minimized, measure V2 will ensure that vegetation impacts will be reduced, measure V3 will reduce the impact to the existing terrain and measure V4 will minimize the impact of new project features.

NEPA Considerations

Introduction of new project features will occur. In addition, the existing terrain, vegetation and views will be altered. However, these changes will not substantially diminish the existing aesthetic environment in the project area.

<u>Avoidance, Minimization and/or Mitigation Measures</u>

The following mitigation, avoidance and minimization measures will be carried out in order to ensure that no permanent impact to the aesthetic environment will occur due to the project.

V1: The impact on existing views will be minimized by:

- Avoiding the removal of vegetation in areas where narrow vegetative buffer strips separate adjacent residential properties from the road edge.

- Water quality improvement basins will be sited to minimize the motorist's visual exposure from elevated roadway vantage points. Basins will be sited and designed to minimize and/or avoid removing existing vegetation. Screening of the basins from motorists view will be accomplished through a combination of curvilinear shapes and vegetative plantings.

- For the basin approximately located at KP 4.41 (PM 2.74), minimize and/or avoid removing trees next to adjacent properties and the bike trail.

- For the basin approximately located at KP 5.89 (PM 3.66), construct below grade, to maximize a low profile. Minimize tree removal on the lakeside, in order to obstruct views of SR 28.

V2: The following measures will be taken to reduce, minimize and compensate for impacts to vegetation:

- All areas disturbed during construction will receive permanent erosion control measures. All finished slopes and contour graded areas will be hydroseeded with a permanent seed mix composed of native plant species indigenous to the area. All seeds and container plants will be from TRPAs plant list. In addition, revegetation work will install containerized native plants to supplement seeding. All native vegetation removed will be replaced in the following ratios: 1) Trees-1 liner plant for every 1 inch DBH removed; 2) Shrubs- 2 liner plants for every shrub over 0.6 m (2 ft) removed; and 3) Grasses and Forbs- shall be replaced at a rate determined by the Landscape Architect.

- All small trees, tree limbs, shrubs and other woody debris generated during clearing and grubbing operations will be chipped and stockpiled for future use as erosion control and in areas designated for revegetation.

- During clearing and grubbing operations, remove and stockpile existing topsoil's as part of the earthwork. The topsoil shall be replaced and augmented in areas where revegetation work will be implemented. Duff will be collected, stockpiled,

and reapplied to disturbed areas. In addition, disturbed areas will also receive compost incorporation.

- Finished slopes will reflect sensitivity to the natural topography and vegetation of the surrounding area. Newly constructed RSP slopes will be constructed in such a way as to incorporate existing vegetation at top of slope without removal. In areas where space allows, pockets of native soil that supports vegetation will be incorporated into RSP slopes.

- Where possible, planting areas around basins adjacent to roadway will be landscaped in order to improve appearance in the built environment.

- Revegetate all disturbed areas associated with basin and bio-swale construction utilizing seeding, container planting and pine needle mulching. Integrate logs and boulders into basin and bio-swale design for added camouflage effects.

- All tree removal will be minimized throughout the project, by limiting excavation and fill around large trees greater than 150mm (6in). At KP 1.54 (PM .96) special care will be taken to shape the basin to maximize existing clearings in vegetation while avoiding dense tree and shrub locations.

- In all areas, removal of existing vegetation will be avoided to the extent feasible.

V3: The following measures will be taken to reduce impacts to the existing terrain:

- Where RSP material is required, indigenous materials will be utilized matching local colors and textures. All rock generated during earthwork operations over 150 mm in size shall be stockpiled and used in drainage facilities and other areas where RSP is to be used. Newly harvested material will be treated with environmentally friendly chemical stains that give rock a weathered appearance.

- When constructing basins, berms will be considered as an alternative to excavation in order to minimize disturbance.

- All disturbed areas will utilize temporary erosion control measures during construction.

V4: The following measures will be taken to reduce the impact of the proposed structures:

- All retaining walls will be faced with architectural treatment textures (including painting and staining) in order to integrate structures into surrounding natural or urban setting. Specific architectural treatment types will be determined after completion of environmental documentation and will be approved by TRPA prior to construction. More specifically, new roadway items that may be viewed from the Lake will be evaluated on a case-by-case basis by TRPA. Photographs will be taken from the shoreline of the areas where new roadway items/structures are currently planned to be built. In the areas where the new drainage structures could be visible from the Lake, visual simulations will be prepared to assist Caltrans and TRPA assess what type of strategy will be used to screen the new structures from the viewers on the Lake.

- All roadway signage will be kept to a minimum. If new signage is introduced, posts will be of wood construction and backs of signage will be painted an approved TRPA color or backed with painted metal or wood.

- All new drainage facilities (i.e. culverts and flared end sections) will be treated with environmentally benign stains to induce a weathered appearance that blends elements into existing landscape.

- Water quality improvement basins will avoid the use of concrete or asphalt lining. Water quality improvement ditches will be rock lined whenever possible. The construction of features with harsh angles and steep slopes will be avoided wherever possible. Caltrans will integrate features into surroundings through the use of curvilinear forms and contour grading. Native boulders and logs removed during clearing and grubbing operations will be used as landscape elements to integrate basins into surroundings. Where possible, basin side slopes will be designed with 1:3 to 1:4 slopes or flatter to promote successful revegetation. In locations where large basins are proposed, basins may be broken into smaller basin units that fit into existing clearings of forest canopy.

- Newly installed drainage features will be designed and located to maximize integration into the surrounding landform. Drainage facilities will be treated with environmentally friendly stains to blend features into adjacent rock colorations. Facilities will be strategically located or disguised to minimize the motorist's visual exposure to them.

- Any water treatment facilities that utilize spreading water such as check dams will be constructed of native materials (rock, soil and vegetation) and be low in profile, where possible.

- Where possible, access roads to basins will be constructed of a paver, geogrid system or hardened decomposed granite in order to minimize visual distractions adjacent to roadway and allow for revegetation.

- In locations with narrow right-of-way limits or useable roadside areas, the use of linear treatment facilities such as bio-swales with check dams will be maximized.

PHYSICAL ENVIRONMENT

3.10 Air Quality

3.10.1 Affected Environment

In 1969, California and Nevada designated Lake Tahoe as its own Air Basin, and stringent Basin-specific air quality standards were adopted. The revised standards include, for example, lowering the California Carbon Monoxide (CO) standard from 9 ppm to 6 ppm to compensate for the effects of increased respiration at high altitude, and adoption of a stringent visual range standard of 30 miles in dry. Additional Basin-specific air quality goals were adopted as local and regional visibility thresholds defined in the 1981 TRPA Environmental Threshold Carrying Capacities, and specific emission reduction goals were adopted for Carbon Monoxide (CO), dust, and smoke.

Air quality at Lake Tahoe is excellent when compared to that of most urban areas. Few, if any, violations of state and federal air quality standards for gases and particles have occurred in recent years. According to the California Air Resources Board (Almanac) the Lake Tahoe Air Basin did not exceed State or Federal standards for CO, Nitrogen Dioxide (NO_2) or Particulate Matter (PM_{10}) in 2002. The Air Basin exceeded the State Ozone (O_3) standard on one day but did not exceed the federal standard during the year. The Air Basin also did not exceed the TRPA threshold for CO in that year. The Air Basin has routinely exceeded the TRPA ozone standard, as it did in 2002.

Table 3-7 Tahoe Air Basin Pollutant Concentrations

Pollutant	Maximum 2002 Reading	State Standard	Federal Standard	Lake Tahoe Standard
Ozone (1 hr.)	.102 ppm	.090 ppm	.120 ppm	.080 ppm
Ozone (8 hr.)	.079 ppm	-	.080 ppm	-
CO (8 hr.)	3.0 ppm	9.0 ppm	9.0 ppm	6.0 ppm
CO (1 hr.)	3.8 ppm	20.0 ppm	35.0 ppm	-
PM_{10} (annual)	State 17.1 $\mu g/m^3$, Federal 19.9 $\mu g/m^3$	20 $\mu g/m^3$	50 $\mu g/m^3$	-
PM_{10} (24 hr.)	State 46 $\mu g/m^3$, Federal 51 $\mu g/m^3$	50 $\mu g/m^3$	150 $\mu g/m^3$	-
NO_2 (annual)	.012 ppm	-	.053 ppm	-
NO_2 (1 hr.)	.088 ppm	0.25 ppm	-	-

Numbers in the table above are average concentrations of pollutants over the specified time periods. Data is from nearest measurement locations to the project at South Lake Tahoe and Echo Summit. Extreme events are excluded from the State measurements of PM_{10}. PM_{10} National and State figures may vary for a number of other reasons discussed in the introduction to the Almanac.

Tahoe Air Basin emissions of Nitrous Oxides (NO_x), Reactive Organic Gases (ROG), PM_{10}, and CO have not increased in the last 25 years.

Table 3-8 Pollutant Emissions in the Tahoe Air Basin

Pollutant	1975	1980	1985	1990	1995	2000
NOx	2	1	2	2	2	2
ROG	6	3	4	3	3	3
PM_{10}	1	1	1	1	1	1
CO	72	33	36	32	27	21

All figures are in tons of pollutant per day; ppm = parts per million

3.10.2 Regulatory Setting/TRPA Thresholds

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include conflicts with existing air plans, violations of air standards, exposure of substantial pollutant concentrations to sensitive receptors, creation of objectionable odors, or cumulative contribution to the net increase of a criteria pollutant in a non-attainment area.

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for CO, NO_2, O_3 and particulate matter that is 10 microns in diameter or smaller (PM_{10}).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity is concerned with how well the region is meeting the standards set for the pollutants listed above. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of years, usually 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would result in a violation of the Clean Air Act. If no violations would occur, then the regional planning organization, such as the Tahoe Metropolitan Planning Organization, and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the RTP is in conformity with the Clean Air Act. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to be in conformity at the regional level.

Conformity at the project-level is also required. Again the pollutants of concern are: CO, NO_2, O_3, and PM_{10}. If a region is meeting the standard for a given pollutant, then the region is said to be in "attainment" for that pollutant. If the region is not meeting the standard, then it is designated a "non-attainment" area for that pollutant. Areas that were previously designated as non-attainment areas but have recently met the standard are called "maintenance" areas. If a project is located in a non-attainment or maintenance area for a given pollutant, then additional air quality analysis and reduction measures in regard to that pollutant is required. This is most frequently done for CO and PM_{10}.

The following are the TRPA thresholds for Air Quality:

- AQ1-Carbon Monoxide levels shall not exceed the TRPA 8-hour 6.0 ppm standard.
- AQ2-Ozone levels shall not exceed the TRPA 1-hour standard of 0.08 ppm.

- AQ3-Particulate Matter concentrations shall not exceed the California and Federal standards for 24-hour concentrations and the annual average.

- AQ4-TRPA's regional and sub-regional visibility standards shall not be violated. In addition, for regional and sub-regional visibility, wood smoke concentrations shall be reduced 15 percent below the 1981 levels and for sub-regional visibility suspended soil particles shall be reduced 30 percent below the 1981 levels.

- AQ5-There shall be a 7 percent reduction in traffic volume on the US 50 corridor from the 1981 values.

- AQ6-Annual emissions from wood smoke shall be reduced 15 percent from 1981 levels.

- AQ7-Vehicle Miles Traveled (VMT) shall be reduced 10 percent below the 1981 levels.

- AQ8-Dissolved Inorganic Nitrogen (DIN) load on Lake Tahoe from atmospheric sources shall be reduced by approximately 20 percent of the 1973-1981 annual average.

3.10.3 Environmental Consequences

The proposed project and the No Build Alternative will not have any substantial influence on the capacity or composition of the traffic. Certain transportation projects have no impact on regional emissions. These "neutral" projects that, because of their nature, will not affect the outcome of any regional emissions analyses and may be excluded from the regional emissions analyses are required in order to determine conformity with a Transportation Improvement Plan (TIP). Caltrans and the U.S. EPA also agree that project level analyses of local CO impacts are not necessary for non-capacity increasing projects that are on the same alignment.

Construction of the project would result in the generation of suspended particulate matter. Although the amount of dust generated will result in an impact, the impacts will be temporary, local, and limited to the areas of construction. Dust control practices must be incorporated into the project to mitigate this potential impact. The dust control practices used will comply with Caltrans' Standard Construction Specifications.

CEQA Considerations

For Alternative 1, the only impacts on Air Quality resulting from the project will be those related to construction. These impacts will be less than significant.

TRPA Considerations

Construction of the project will not result in the inability to meet any of the TRPA thresholds listed above in the construction year or in the years following construction.

NEPA Considerations

The project will not increase highway capacity and will not result in any substantial air quality impacts.

Prior to May 1, 2004, the design concept and scope of the proposed projects (EA 2a940 and 29090) are consistent with the project description in the 2000 RTP, the 2002 Federal Transportation Improvement Program (FTIP) and are exempt from regional emissions analysis requirements. However, on May 1, 2004, the Tahoe Metropolitan Planning Organization's (TMPO) RTP expired and therefore a lapse in air quality conformity has occurred. The projects will not receive final environmental approval until they are included in a RTP that conforms with the Clean Air Act. TMPO is currently working on a revised conforming RTP.

AQ1: Below is a list of avoidance and minimization measures to reduce the emissions of fugitive dust. The dust control practices used will be in compliance with Caltrans' Standard Construction Specifications. They may include but not be limited to:

- Covering open bodied trucks when used for transporting materials likely to give rise to airborne dust.
- The use of water or chemicals for control of dust in the construction process and the grading of roads or the clearing of land.
- Water disturbed areas to form a compact surface after grading and earth working.
- Watering disturbed (graded or excavated) surfaces as necessary, increasing frequency when weather conditions require.

- The prompt removal of earth or other material from paved roadways onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

3.11 Biological Resources

3.11.1 Affected Environment

This section identifies the habitats and species present within the SR 28 project area. Information regarding soils, Section 3.13, and hydrology, Section 3.15, are included in their respective sections.

Habitats

Natural habitats occurring within the project limits are discussed below. For information regarding the built environment see Section 3.5 Land Use.

Sierran Mixed Coniferous Forest

The dominant plant community in the general project area consists of Sierran mixed coniferous forest. The coniferous forest is dominated by Ponderosa pine (*Pinus ponderosa*), Jeffery pine (*Pinus jefferyi*), incense cedar (*Calocedrus deccurens*), and white fir (*Abies concolor*). Common shrubs include antelope bitterbrush (*Purshia tridentata*), huckleberry oak (*Quercus vaccinifolia*), and green-leaf manzanita (*Arctostaphylos patula*).

Montane Riparian

Montane riparian vegetation can be found within the project area primarily adjacent to Burton and Barton creeks, Dollar Creek, Watson Creek, Carnelian Canyon, Tahoe Vista Creek and sporadically along other minor drainages. Dominant species include alder (*Alnus incana* ssp *tenuifolia),* willow (*Salix*, sp.), and black cottonwood (*Populus trichocarpa*). Understory shrubs include twinberry (*Lonicera involucrata*), mountain maple (*Acer glabrum* var. *torreyi*), and creek dogwood (*Cornus sericea*).

Wetland

Within the project area, wetlands (as defined by ACOE methodology) may be found adjacent to Burton and Barton creeks, sporadically along other minor drainage ways, and within storm water detention/infiltration facilities. Montane meadow wetlands are

also located adjacent to the project area between Tahoe City and Dollar Creek. Common species found within these wetland areas include sedges (*Carex*, spp.), corn lily (*Veratrum californicum*), spicate checkerbloom (*Sidalcea oregana*), arrow leaf groundsel (*Senecio tringularis*), ciliate willowherb (*Epilobium ciliatum*), willows and dogwoods.

Plant Species

This section provides information on sensitive plant species that are known or may occur in the project vicinity. Table 3-9 below lists all potential sensitive plant species compiled from USFWS, USFS, CNPS, and CNDDB lists, literature research, and project files. Expanded discussions are available in the separately bound Natural Environment Study Report.

Table 3-9: Sensitive Plant Species Considered as Part of Environmental Review

Scientific Name	Common Name	Status	Habitat/ Notes	Bloom Period	Potential within project vicinity
Arabis rigidissima demota	Galena Creek Rock Cress	List 1B, LTBMU	Broadleaf upland forest and upper montane coniferous forest on rocky substrate.	August	Low. Not detected during surveys.
Berebris aquifolium repens (= B. sonnei)	Truckee Barberry	FPD			Moderate. Not detected during surveys.
Botrychium ascendens	Upswept Moonwort	List 2	Lower montane coniferous forest, mesic soils.	July-August	Moderate. Not detected during surveys.
Carex limosa	Shore Sedge	List 2	Bogs, fens, montane coniferous forest, meadows, marshes	June-August	Moderate. Not detected during surveys.
Carex paucifructus (= C. mariposana)	Sierra Sedge	TRPA			Moderate.. Not detected during surveys.
Chaenactis douglasii alpina	Alpine Dusty Maidens	List 2	Granitic alpine boulder and rock fields	July-September	None. Appropriate habitat not available within project area. Not detected during surveys.
Draba asterophora asterophora	Tahoe Draba	List 1B, TRPA, LTBMU	Alpine boulder and rock fields in subalpine coniferous forest	July-August	None. Appropriate habitat not available within project area. Not detected during surveys.
Draba asterophora macrocarpa	Cup Lake Draba	List 1B, TRPA, LTBMU	Subalpine coniferous forest, rocky substrates.	July-August	None. Appropriate habitat not available within project area. Not detected during surveys.
Epilobium howelii	Subalpine Fireweed	List 1B, LTBMU	Meadows, subalpine coniferous forest, mesic sites	July-August	Low. No occurrence in Tahoe Region. Not detected during surveys.
Epilobium palustre	Marsh Willowherb	List 2			Moderate. Not detected during surveys.
Epiolobium oreganum	Oregon Fireweed	List 1B	Bogs, fens, lower mesic montane coniferous forest	June-August	Moderate.. Not detected during surveys.
Eriogonum umbellatum torreyanum	Donner Pass Buckwheat	FSC, List 1B, LTBMU	Meadows, upper montane coniferous forest, rocky volcanic.	July-September	Low. Appropriate habitat not available within project area. Not detected during surveys.
Glyceria grandis	American Manna	List 2	Bogs, fens, meadows, marshes, stream and lake margins, wet	June-August	Moderate. Not detected during surveys.

Scientific Name	Common Name	Status	Habitat/ Notes	Bloom Period	Potential within project vicinity
	Grass		places		
Lewisia longipetala	Log Petaled Lewisia	List 1B, TRPA, LTBMU	Alpine boulder and rock fields, subalpine coniferous forest, mesic, rocky sites	July-August	None. Appropriate habitat not available within project area. Not detected during surveys.
Rorripa subumbellata	Tahoe Yellow Cress	FC, CE, TRPA, LTBMU	Decomposed granitic beaches of Lake Tahoe	May-September	Moderate. Project will have minor impacts to lakeshore areas. Not detected in project area since 1940s. Not detected during surveys.
Scirpus subterminalis	Water Bullrush	List 2	Marshes, montane lake margins	July-August	Low. Not detected during surveys.
Scutellaria galericulata	Marsh Skullcap	List 2	Wet sites, mesic meadows and streambanks in coniferous forest	June-September	Moderate. Not detected during surveys.

CE: CA Endangered **CT:** CA Threatened **CR:** CA rare; Not presently threatened with extinction, it is in such small numbers that it may become endangered if its present environment worsens. **CSC**: California Special Concern: Plants protected under native Plant protection Act (NPPA), California Environmental quality Act (CEQA), or the Natural Communities Conservation Planning Act (NCCPA) **FE:** Federal Endangered **FT**: Federal Threatened **FPE:** Federal Proposed Endangered **FPT:** Federal Proposed threatened **FC**: Candidate for Federal Listing; **FPD:** Federal Proposed Delisting; **FSC:** Federal Species of Concern- Species for which the USFWS has sufficient information to propose them as threatened or endangered under the Endangered Species Act. **CNPS List 1B:** California Native Plant Society list of plants rare, threatened or endangered in California **CNPS List 2:** California native Plant Society list of plants rare, threatened or endangered in California, but more common elsewhere. **CNPS List 3:** California native Plant Society list of plants about which there is a need for more information- a review list. **CNPS List 4:** California native Plant Society list of plants of limited distribution- a watch list. **TRPA**: Tahoe Regional Planning Agency Special Interest Species; **LTBMU:** Lake Tahoe Basin Management Unit Sensitive Species

Animal Species

This section provides information on sensitive animal species that are known or may occur in the project vicinity. Table 3-10 below lists all potential sensitive animal species compiled from USFWS, USFS, and CNDDB lists, literature research, and project files.

Table 3-10: Sensitive Animal Species Considered as Part of Environmental Review

Scientific Name	Common Name	Status	Habitat	Potential within project vicinity
Accipiter genitilis	Northern Goshawk	CSC, LTBMU, MI, TRPA	Mature coniferous forests	Moderate. Goshawk territories located near project area
Anas platyrhynchos	Mallard	MI, TRPA	Shallow ponds, lakes, rivers, marshes and flooded fields. Nests in concealing vegetation.	High. Species detected within project area
Aplodontia rufa	Sierra Nevada Mountain Beaver	CSC	Dense riparian-deciduous forest, preferring open and intermediate canopy cover with dense understory near water. Deep, friable soils required for burrowing	Moderate. Potential suitable habitat is located within project area.
Aquila chrysaetos	Golden Eagle	TRPA	Nest on cliffs and in large trees in open areas. Hunts in rolling foothills, mountain areas, sage-juniper flats,	Low. Suitable nesting habitat unavailable in project vicinity

Scientific Name	Common Name	Status	Habitat	Potential within project vicinity
			and deserts.	
Capnia lacustra	Lake Tahoe Benthic Stonefly	MI	Deep waters of Lake Tahoe	Low. Project does not impact deep waters of lake Tahoe
Corynorhinus townsendii	Townsend's Big-Eared Bat	LTBMU	Desert and pinyon/scrub associations. Roosts in caves, mines and buildings	Low. Project area may provide foraging habitat, no breeding or roosting habitat available. Unconfirmed presence in Tahoe region
Dendroica petechia brewsteri	Yellow Warbler	CSC	Breeds in riparian deciduous habitats	Moderate. Potential suitable habitat is located within project area.
Dendropagus obscurus	Blue Grouse	MI	Open, mid- to mature-aged stands of fir, Douglas-fir, and other conifer habitats interspersed with medium to large openings, and available water	Low. Marginal habitat available within project area
Drycopus pileatus	Pileated Woodpecker	MI	Dense, mature deciduous and coniferous forests, requires large territories.	Low. Suitable nesting habitat not present in project area
Empidonax trallii	Willow Flycatcher	CE, LTBMU, MI	Nests in extensive montane willow thickets 2,000-8,000 feet elev.	Low. Extensive willow thickets not available in project area
Euderma maculatum	Spotted Bat	FSC	Occurs in a variety of habitats. Roosts in rock crevices along cliffs or caves	Low. Project area may provide foraging habitat, no breeding or roosting habitat available. Unconfirmed presence in Tahoe region
Falco peregrinus anatum	Peregrine Falcon	FD, LTBMU, TRPA	Nests and roosts on protected ledges	Low. Suitable nesting habitat unavailable in project vicinity
Gilia bicolor pectinifer	Lahontan Tui Chub	LTBMU	Large, deep lakes of the Lahontan basin. Algal beds in shallow, inshore areas seem necessary for successful spawning, egg hatching, and larval survival	None. Appropriate aquatic habitat is not available within project area.
Gulo gulo luteus	California Wolverine	CT, LTBMU	Montane conifer, subalpine conifer, alpine dwarf-shrub, wet meadow, and montane riparian habitats. Prefer areas with low human disturbance,	Low. Unlikely to enter developed project area.
Haliaeetus leucocephalus	Bald Eagle	FT, CE, MI, TRPA	Coniferous and conifer/hardwood forests near water	Moderate. Closest recorded nesting/roosting occurrence is 15 miles from project area, but has been recorded perching in project vicinity
Hydromantes platycephalus	Mount Lyell Salamander	FSC, CSC	Inhabits high elevation rock fields in mixed conifer, lodgepole pine, and subalpine areas, using rock fissures seeps, shade, and low plants	Low. Appropriate habitat not present in project area. Species not known from Tahoe Region
Hypomesus transpacificus	Delta Smelt	FT	Inhabits slow waters of Sacramento-San Joaquin delta and tributaries	None. Project area is outside of known range of this species.
Lepus americnus tahoensis	Sierra Nevada Snowshoe Hare	CSC	Early successional montane forests with brushy understory	Moderate. Potential suitable habitat is located within project area.
Martes americana	American Marten	LTBMU	Mature coniferous forests	Moderate. Marginal foraging habitat available in project area. Denning habitat not available.
Martes pennanti pacifica	Pacific Fisher	CSC, LTBMU	Mature coniferous forests	Low. Lack of recent sightings, project area within suspected gap in distribution
Myotis ciliolabrum	Small Foot Myotis	FSC	Inhabits relatively arid woody and brushy uplands near water. Colonies	Low. Project area may provide foraging habitat,

Scientific Name	Common Name	Status	Habitat	Potential within project vicinity
			roost in buildings, mines, and caves	marginal breeding or roosting habitat available. Unconfirmed presence in Tahoe region
Myotis evotis	Long Eared Myotis	FSC	Inhabits a variety of wooded habitats. Roosts in buildings, crevices, under bark, and in snags	Moderate. Forest adjacent to project area may provided suitable roosting and foraging habitat
Myotis thysanodes	Fringed Myotis	FSC	Inhabits a variety of wooded habitats. Roosts in caves mines, crevices and buildings.	Moderate. Project area may provide foraging habitat, marginal breeding or roosting habitat available.
Myotis volans	Long Leg Myotis	FSC	Commonly inhabits woodlands and forests above 4,000 feet. Roosts in rock crevices, buildings, tree bark, in snags, mines, and cave.	Moderate. Forest adjacent to project area may provided suitable roosting and foraging habitat
Myotis yumanensis	Yuma myotis	FSC	Inhabits open forests and woodlands near water. Roosts in caves, mines, crevices, and buildings.	Moderate. Project area may provide foraging habitat, marginal breeding or roosting habitat available.
Odecoileus hemionus	Mule Deer	MI, TRPA	Forests, brushfields, and meadows statewide.	High. Deer may forage in project vicinity, but project area not suitable for fawning
Onochorhynchus clarki henshawi	Lahontan Cutthroat Trout	FT, MI, TRPA	Lakes and streams of the Lahontan basin.	Low. Species not known from drainages within project area, extirpated from Lake Tahoe proper
Onocorhynchus mykiss	Central Valley Steelhead	FT	Sacramento-San Joaquin rivers and accessible tributaries	None. Project area is outside of known range of this species.
Onocorhynchus mykiss	Rainbow Trout	MI	Cold perennial freshwater systems statewide	Moderate. Species may use drainages within project area on seasonal basis
Onocorynchus tshawyscha	Central Valley ESU Chinook Salmon (fall and spring runs)	FPE/FPT	Sacramento-San Joaquin rivers and accessible tributaries	None. Project area is outside of known range of this species.
Pandion haliaeetus	Osprey	CSC, TRPA	Conifer and conifer/hardwood forests near water	High. Species known from within 1 mile of project area
Pogonicthys macrolepidotus	Sacramento Splittail	FE	Inhabits slow waters of Sacramento-San Joaquin delta and tributaries	None. Project area is outside of known range of this species.
Rana muscosa	Mountain Yellow-Legged Frog	FC, CSC, LTBMU	Inhabits ponds, tarns, lakes, and streams at moderate to high elevations.	Low. Drainages within project area of insufficient flow and depth to provide refuge for over-wintering larvae. Lack of recent detections in northern Tahoe Basin
Rana pipiens	Northern Leopard Frog	LTBMU	Quiet permanent or semi-permanent aquatic habitat with emergent and submergent vegetation, and vegetated habitat with moist substrate in vicinity of aquatic habitat	Low. Presumed extirpated in Tahoe basin due to lack of detections in last 30 years
Riparia riparia	Bank Swallow	CT	Require available sandy vertical bluffs or riverbanks for digging nest burrows. Nests in colonies.	Low. Nesting habitat not available within project vicinity.
Salvelinus fontinalis	Brook Trout	MI	High mountain lakes and streams, generally above 4,000' elevation, requires cool oxygenated waters	Moderate. Species may use drainages within project area on seasonal basis

Scientific Name	Common Name	Status	Habitat	Potential within project vicinity
Strix nebulosa	Great Grey owl	LTBMU	Breeds in old-growth red fir, mixed conifer, or lodgepole pine habitats, always in the vicinity of wet meadows	Low. Lack of recorded occurrences in Tahoe basin. Suitable nesting and foraging habitat not available within project area
Strix occidentalis occidentalis	California spotted Owl	CSC, LTBMU, MI	Mature forests with suitable nest sites	Moderate. Owl PACs located near project area
Ursus americanus	Black Bear	MI	Forested habitats statewide	High. Somewhat tolerant of human presence
Vulpes vulpes necator	Sierra Nevada red Fox	LTBMU	Coniferous forests above 5,000 feet, often associated with montane meadows	Low. Potentially suitable habitat is present within project area. Not detected during recent surveys

CE: CA Endangered **CT:** CA Threatened **CR:** CA rare; Not presently threatened with extinction, it is in such small numbers that it may become endangered if its present environment worsens. **CSC**: California Special Concern: Plants protected under native Plant protection Act (NPPA), California Environmental quality Act (CEQA), or the Natural Communities Conservation Planning Act (NCCPA) **FD:** Federal Delisted **FE:** Federal Endangered **FT**: Federal Threatened **FPE:** Federal Proposed Endangered **FPT:** Federal Proposed threatened **FC**: Candidate for Federal Listing; **FPD:** Federal Proposed Delisting; **FSC:** Federal Species of Concern- Species for which the USFWS has sufficient information to propose them as threatened or endangered under the Endangered Species Act. **TRPA**: Tahoe Regional Planning Agency Special Interest Species; **LTBMU:** Lake Tahoe Basin Management Unit Sensitive Species, **MI:** LTBMU Management Indicator Species; Land Resources Management Plan

Weeds

No established infestations of noxious weeds were detected in the project area; however, scattered individuals of noxious weeds do occur on the project site (Klamath weed, thistles). In addition, many species of noxious weeds are known to be moderately common along the state highway system located just outside of the Tahoe Basin (including SR 89 and I-80, north of the project area), which may be potentially dispersed into the Lake Tahoe Basin by way of the highway system. Common noxious weeds in these areas include Klamath weed (*Hypericum perforatum)* spotted and sqaurrose knapweeds and yellow star thistle (*Centaurea maculosa*, *C. squarrossa*, *C. solstitialis*), white-top cress (*Cardaria draba*), quackgrass (*Elytrigia repens*), and Canada thistle (*Cirsium arvense*).

3.11.2 Regulatory Setting/TRPA Thresholds

Biological assessments are required under Section 7(c) of FESA if listed species or critical habitat may be present in the area affected by any major construction activity conducted by, or subject to issuance of a permit from, a federal agency as defined in Part 404.02. Under Section 7(a)(3) of FESA every federal agency is required to consult with the United States Fish and Wildlife Service (USFWS) or National Marine Fisheries Service on a proposed action if the agency determines that its proposed action may affect an endangered or threatened species.

The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). If impacts to active nests or individual birds are expected, Caltrans shall consult with USFWS regarding appropriate action to comply with the MBTA.

Executive Order 13112 (February 3, 1999) charges that each federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law: (1) identify such actions; and (2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them. An "invasive species" is defined as a species that is 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112).

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include interference with the movement of native resident or migratory species, conflict with policies or ordinances protecting biological resources or with an approved biological habitat management plan, adversely affecting endangered, threatened, rare species, or their habitat, or adversely affecting wetlands protected by Section 404 of the Clean Water Act.

The limits of jurisdiction of fish and game Code Section 1602 includes the bed, channel, and bank of any river, stream or lake in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit. The limits of this jurisdiction typically extend to the outer edge of riparian vegetation, or to the top of bank for areas with little or no riparian habitat. Work within the jurisdiction of fish and game Code Section 1602 will require the use of a Section 1602 "Streambed Alteration Agreement".

Because state listed species may be impacted by the proposed project, consultation with state resource agencies was necessary in accordance with legal requirements set forth under sections 2050-2098 of the fish and game Code. For projects that affect both a state and federal listed species, compliance with the Federal Endangered Species Act will satisfy the California Endangered Species Act if the California Department of Fish Game (CDFG) determines that the federal incidental take authorization is "consistent" with CESA under fish and game Code Section 2080.1.

The following are the goals, policies and environmental thresholds established within the Placer County General Plan that provide guidance for development in the County specific to biological resources. Impacts on biological resources that do not conform to Placer County goals, policies or environmental thresholds will be considered "significant" under CEQA.

- Require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams; 50 feet from centerline of intermittent streams; and 50 feet from the edge of sensitive habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened or endangered species.

- The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff and to encourage the use of BMPs for agricultural activities.

- The County shall support the "no net loss" policy for wetland areas regulated by the U.S. Army Corps of Engineers (ACOE), the USFWS, and the CDFG. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

- The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.

- The County shall identify and protect significant ecological resource areas and other unique wildlife habitats critical to protecting and sustaining wildlife populations. Significant ecological resource areas include the following:

- Wetland areas including vernal pools.
- Stream environment zones (SEZs).
- Any habitat for rare, threatened or endangered animals or Plants.
- Critical deer winter ranges (winter and summer), migratory routes and fawning habitat.
- Large areas of non-fragmented natural habitat, including Blue Oak
- Woodlands, Valley-Foothill Riparian, vernal pool habitat.
- Identifiable wildlife movement zones, including but not limited to, non-fragmented SEZs, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway.
- Important spawning areas for anadromous fish.

The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the reasonable value of the habitat for wildlife is maintained.

- The County shall support preservation of the habitats of rare, threatened, endangered, and/or other special status species. Federal and state agencies, as well as other resource conservation organizations, shall be encouraged to acquire and manage endangered species' habitats.
- The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually sensitive areas such as hillsides, ridges, and along important transportation corridors.
- The County shall require developers to use native and compatible non-native species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permits or for project mitigation.
- The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects.

- The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient catchment, and wildlife habitats. Such communities shall be restored or expanded, where possible.

- The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.

- The County shall support the preservation of native trees and the use of native, drought- tolerant plant materials in all vegetation and landscaping projects. The County shall require that new development be designed and constructed to preserve the following types of areas and features as open space to the maximum extent feasible:

    - High erosion hazard areas;

    - Scenic and trail corridors;

    - Streams, streamside vegetation;

    - Wetlands;

    - Other significant stands of vegetation;

    - Wildlife corridors; and

    - Any areas of special ecological significance.

The following TRPA Thresholds apply to the project area:

- W1-Wildlife protection and maintenance of special interest species viability in the Lake Tahoe region. Provide a minimum number of population sites and disturbance zones for the following species: 1) Northern Goshawk (*Accipiter gentilis*); 2) Osprey (*Pandion Haliaetus*); 3) Bald Eagle (*Haliaeetus leucocephalus*); 4) Golden Eagle (*Aquila chrysaetos*); 5) Peregrine Falcon (*Falco peregrinus anatum*); 6) Waterfowl (all open water associated species); and 7) Deer (*Odocoileus hemionus*).

- W2-A non-degradation standard shall apply to wildlife habitat consisting of deciduous trees, wetlands, and meadows while providing for opportunities to increase the acreage of such riparian associations.

- F1-Maintain 75 miles of habitat rated excellent, 105 miles of good, and 38 miles of marginal stream habitat.

- F2-A non-degradation standard shall apply to fish habitat in Lake Tahoe.

- F3-Achieve the equivalent of 5,948 total acres of excellent habitat in Lake Tahoe.

- F4-Until in-stream flow standards are established in the Regional Plan to protect fishery values, a non-degradation standard shall apply to in-stream flows.

- F5-It shall be a policy of the TRPA governing board to seek transfers of existing points of water diversion from streams to Lake Tahoe.

- V1-Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance, and pattern. Provide for promotion and perpetuation of late successional/old growth forests. The goal is to increase late successional/old growth conditions across elevational ranges of the Lake Tahoe Basin forest cover types. Individual trees greater than 30-inches dbh shall also be favored for retention because of their late seral attributes (qualities of older vegetation i.e. beneficial feeding, nesting habitat, etc).

- V2-Provide for the non-degradation of the natural qualities of any plant community that is uncommon to the region or of exceptional scientific, ecological, or scenic values. This threshold shall apply but not be limited to 1) deep-water plants of Lake Tahoe; 2) Grass Lake (sphagnum bog); 3) Osgood swamp; and 4) the Freel Peak Cushion Plant community.

- V3- Maintain a minimum number of population sites for each of five sensitive plant species: 1) Carex paucifructus; 2) Lewisia pygmaea logipetala; 3) Draba asterophora v. macrocarpa; 4) Draba asterophora v. asterophora; and 5) Rorippa subumbellata.

3.11.3 Environmental Consequences

Impacts to biological resources due to the project will be less than substantial pursuant to NEPA, CEQA and TRPA Code.

The proposed project will result in some loss of habitat, or reduction in the habitat quality or timing of nesting, denning, and/or foraging opportunities for special status plant and animal species within the project area. These losses may affect, but are not likely to adversely affect, special status plant and animal species within the project area. In addition, the project would also result in some loss of areas of biological concern including "SEZs" under the jurisdiction of TRPA and waters under the jurisdiction of the ACOE and the CDFG.

The scale of these reductions and/or losses is small within the analysis area and design features and avoidance, minimization and mitigation measures exist to reduce potential direct, indirect, and cumulative impacts. Additionally, permit related restrictions shall be implemented into the project. These proposals are consistent with conservation strategies and direction as provided in TRPA goals, policies, and ordinances, the United States Department of Agriculture Forest Service (USFS) Lake Tahoe Basin Management Unit Land and Resource Management Plan, and the Sierra Nevada Forest Plan Final Environmental Impact Report Record of Decision.

The following summarizes the proposed project's impacts to Special Status biological resources:

Stream Environment Zones and Jurisdictional Waters

Work that will result in direct impacts to SEZ areas will consist of drainage improvements (replace/extend, line, or install culverts, placement of RSP, Flared End Section (FES), etc.), and revegetation and erosion control activities. A total of 873.3 m^2 (9,400 ft^2 or 0.216 acre) of SEZ will be impacted by both adverse and beneficial activities. Of this total, 645.6 m^2 (6,950 ft^2 or 0.160 acre) will be disturbed by additional coverage (fills and structures), and 21.4 m^2 (230 ft^2 or 0.005 acre) will be disturbed by revegetation activities.

It should be noted that areas delineated as SEZs in the Lake Tahoe basin generally encompass jurisdictional waters of the United States (including wetlands) within them, as well as areas that would not meet the definition of jurisdictional waters. Within SEZs the following jurisdictional resources will be impacted:

Jurisdictional Waters of The U.S.

Including the placement of the new Corrugated Metal Pipe (CMP) culverts and associated fill (culvert extension, FES, RSP), approximately 15.0 m^3 (19.6 yd^3) of fill will be permanently placed below the ordinary high water mark (OHWM) of these drainages. An area totaling 453 m^2 (0.112 acre) will be permanently impacted below the OHWM of these drainages during construction (includes the area occupied by the culvert as well as structures at each end). Approximately 1.7 m^3 (2.2 yd^3) of temporary fill covering an area of 9.7m^2 (0.002 acre) will be required for temporary water diversion activities.

Within these jurisdictional waters, potential fish bearing waters are located at Burton, Dollar, Watson, Carnelian Canyon, and Tahoe Vista (Snow) Creeks. Impacts due to culvert rehabilitation or extension proposed within potential fish bearing drainages will result in a total impact area of 138 m^2 (0.034 acre). A total volume of 0.8 m^3 (1.1 yd^3) will be permanently placed below the OHWM of potential fish bearing drainages.

Jurisdictional Wetlands

A total of 0.087 acre (0.035 hectares) of jurisdictional wetlands are expected to be permanently directly impacted by the placement of fill or structures.

Impervious Coverage Areas (Non-SEZ)

A more complete discussion of impervious coverage's is provided in the TRPA Considerations subsection of Section 3.13 Geology/Soils/Paleontology/Mineral Resources.

A total of approximately 34,300 ft^2 (0.79 acre, 0.32 hectares) of non-SEZ land adjacent to SR 28 is proposed to be covered by impervious surfaces.

In addition, approximately 226,600 ft^2 (5.20 acres, 2.1 hectares) of area will require vegetation removal and subsequent revegetation by planting grasses or applying other appropriate (non-impervious) erosion control materials, as determined by Caltrans Landscape Architecture branch in conjunction with TRPA approval.

Approximately 75,800 ft^2 (1.74 acres, 0.7 hectares) of existing soft coverage in shoulder areas and adjacent to basin access roads will be revegetated.

Common Vegetation

Woody vegetation removal within the project area will result in the removal of 74 trees ranging in size from 2in-40in diameter at breast height (DBH). Four of these trees are greater than 30in DBH. Compensation measures are not proposed for the loss of coniferous trees and woody shrubs within the project area.

Revegetation, Erosion Control, Noxious Weed Control

A restoration and monitoring plan will be prepared by the Caltrans Landscape Architecture Branch and will be submitted for approval by the appropriate agencies prior to project permitting. The restoration plan will outline and detail all planting and erosion control activities, and all associated proposed monitoring activities including length and timing of monitoring, success criteria, remedial actions, and documentation.

Streambanks and adjacent areas that are disturbed by construction activities will be stabilized to avoid increased erosion during subsequent storms and runoff. Bare areas will be covered with mulch and re-vegetated.

Only locally TRPA-approved plant species appropriate for the project area will be used in any erosion control or revegetation seed mix or stock. No dry-farmed straw will be used, and certified noxious weed-free straw shall be required where erosion control straw is to be used. In addition, any hydro-seed mulch used for revegetation activities must also be certified noxious weed-free. The contractor shall employ whatever methods are necessary to ensure that construction equipment enters the project area and remains free of noxious weed sources during construction.

Special Status Wildlife and Plants

It has been determined that the proposed action will have "no effect" on the following Federally listed threatened or endangered, candidate, or proposed species or their critical habitat:

Truckee Barberry (FPD), Central Valley Fall-Run Chinook Salmon (FPT), Central Valley Spring-Run Chinook Salmon (FPE), Central Valley Steelhead (FT), Delta Smelt (FT), Sacramento Splittail (FE), Lahontan Cutthroat Trout (FT), and Mountain Yellow Legged Frog (FC, FSS).

The proposed activities would result in some loss of habitat, or reductions in the habitat quality or timing of nesting, denning, and/or foraging opportunities for the following species. The scale of this reduction and/or loss is small within the analysis

area and design features and avoidance and minimization measures exist to reduce both direct and indirect impacts. Also, the proposals are consistent with conservation strategies and direction as provided in TRPA goals, policies, and ordinances, the USFS-LTBMU Land and Resource Management Plan, and the Sierra Nevada Forest Plan Final Environmental Impact Statement Record of Decision. Therefore, it is Caltrans' determination that the proposed activities "may affect but are not likely to adversely affect" individuals of the following Federally or State listed threatened or endangered, candidate, or proposed species or their critical habitat:

Bald Eagle (FT, CE) and Tahoe Yellow Cress (FC, FSS, CE).

It has been determined that the proposed action will have "no effect" on the following Federal Species of Concern and USFS Sensitive species:

Cup Lake Draba (FSS), Donner Pass Buckwheat (FSS), Long Petal Lewisia (FSS), Subalpine Fireweed (FSS), Tahoe Draba (FSS), Lake Tahoe Benthic Stonefly (FSC), Lahontan Lake Tui Chub (FSS), Mount Lyell Salamander (FSC), Northern Leopard Frog (FSS), American Peregrine Falcon (FD, FSS), Tricolor Blackbird (FSC), Oak Titmouse (FSC), American Dipper (FSC), Black Swift (FSC), Flammulated Owl (FSC), Willow Flycatcher (FSS), California Spotted Owl (FSC, FSS), Great Grey Owl (FSS), California Wolverine (FSS), and Pacific Fisher (FSC, FSS).

It has been determined that the proposed action "may affect but is not likely to adversely affect" individuals of the following Federal Species of Concern and USFS Sensitive species:

Tahoe Yellow Cress (FC, FSS, CE), Northern Goshawk (FSC, FSS), Lewis Woodpecker (FSC), White Headed Woodpecker (FSC), Rufous Hummingbird (FSC), Sierra Nevada Snowshoe Hare (FSC), American Marten (FSS), Spotted Bat (FSC), Townsend's Big Eared Bat (FSS), Small Footed Myotis Bat (FSC), Long Eared Myotis Bat (FSC), Fringed Myotis Bat (FSC), and Long Legged Myotis Bat (FSC).

It has been determined that the proposed action will have "no effect" on the following California State listed or proposed listed threatened or endangered species:

California Wolverine (CT), Bank Swallow (CT), and Willow Flycatcher (CE).

It has been determined that the proposed action "may affect but is not likely to adversely affect" the following California State listed or proposed listed threatened or endangered species:

Tahoe Yellow Cress (CE) and Bald Eagle (CE).

It has been determined that the proposed project will have "no effect" on the following plant species protected by the Native Plant Protection Act:

Alpine Dusty Maidens (CNPS List 2), American Manna Grass (CNPS List 2), Cup Lake Draba (CNPS List 1B), Donner Pass Buckwheat (CNPS List 1B), galena Rock Cress (CNPS List 1B), Long Petal Lewisia (CNPS List1B), Marsh Skullcap (CNPS List 2), Marsh Willowherb (CNPS List 2), Oregon Fireweed (CNPS List 1B), Shore Sedge (CNPS List 2), Subalpine Fireweed (CNPS List 1B), Tahoe Draba (CNPS List 1B), Upswept Moonwort (CNPS List 2), and Water Bullrush (CNPS List 2).

It has been determined that the proposed action will have "no effect" on the following TRPA "special interest" or USFS – Lake Tahoe Basin Management Unit "management indicator" (LTBMU) species:

Sierra Sedge (TRPA), Mallard (TRPA, MI), Blue Grouse (MI), and Pileated Woodpecker (MI).

It has been determined that the proposed action "may affect but is not likely to adversely affect" the following TRPA "special interest" or USFS LTBMU management indicator" species:

Rainbow Trout (MI), Brook Trout (MI), Mule Deer (TRPA, MI), and Black Bear (MI).

CEQA Considerations

There are a number of species, identified above, that may be impacted by the project. However, the project is not likely to adversely affect any of these species. Therefore, impacts to biological species are anticipated to be less than significant. Avoidance and minimization measures offered below will further reduce potential impacts.

Although, no impact is anticipated, focused surveys for Mountain Yellow Legged Frogs, avoidance measure WL2 (see Table 3-11), shall be conducted by a qualified biologist within 30 days prior to the beginning of project related activities.

Avoidance measure AV1, Establish Environmentally Sensitive Areas (ESAs), will ensure that the contractor does not work outside areas reviewed as part of this environmental analysis, thereby reducing potential impacts to habitats and species.

A number of avian and bat species may be present within the project limits. To avoid these species, removal of woody vegetation (trees and shrubs) will occur between August 16th and February 28th prior to project construction, outside of the predicted nesting season for raptors and migratory birds in this area. If woody vegetation removal, construction, grading, or other project-related improvements are scheduled

during the nesting season of protected raptors and migratory birds (March 1st to August 15th), a focused survey for active nests of such birds shall be conducted by a qualified biologist within 30 days prior to the beginning of project-related activities. In addition, vegetation removal will be kept to a minimum throughout construction.

During construction, migration of mammals within the project limits may be somewhat restricted. These impacts are anticipated to be less than significant.

Potential spreading of weeds during construction is possible. In order to reduce this potential impact the contractor will be required to ensure that all work equipment and construction staging areas are weed free and erosion control/revegetation are completed utilizing weed free products.

Some in-stream and wetland impacts will occur as part of the project. Impacts within the creek channel and wetland areas will be minimized by the measures in WQ2, WQ3, WQ5, as well as any measures identified in the ACOE 404 permit. Work will be limited within the wetland areas to the time period between July 15th and October 15th. After construction the disturbed areas will be revegetated per the Conceptual Erosion Control and Revegetation Plan provided in Appendix G.

Some impacts to land designated as SEZ will occur. These impacts would be considered significant, pursuant to TRPA policy, if not compensated for. Compensation as detailed in WQ6 shall be provided at a 1.5 to 1 ratio for direct impacts to SEZ areas according to TRPA policy.

TRPA Considerations

One TRPA special interest species, Mule Deer, may be affected by the project. High quality fawning habitat begins approximately 0.50 mile north of SR 28 throughout the majority of the project area, although potential fawning habitat is located approximately 0.10 mile north of SR 28 near Lake Forest, Dollar Creek, and Carnelian Bay, and crossing SR 28 along the Watson Creek corridor.

A total of 500 ft^2 (0.011 acre, .004 hectares) of potential deer fawning habitat adjacent to SR 28 is expected to be disturbed in the Watson Creek area. The impact will only occur if the culvert at Watson Creek is extended. The trenching activities would impact some roadside habitat but it is expected that vegetation will be reestablished after construction.

Although construction noise and activities and the temporary placement of small areas of fencing designating ESAs within the project area may disrupt normal foraging and movement patterns within the project area, these activities are temporary and restricted in area and should not adversely affect larger scale Mule Deer migration routes to and from the Basin and to and from potential fawning areas. The project, once completed, will not disrupt deer migration. The project does not incorporate physical barriers to migration by placement of structures or increased highway traffic.

As stated above, a total of 9,400 ft^2 (0.216 acre, 0.087 hectares) of SEZ will be impacted by both adverse and beneficial activities. Of this total, 6,950 ft^2 (0.160 acre, 0.065 hectares) will be disturbed by additional coverage (fills and structures), and 230 ft^2 (0.005 acre, 0.002 hectares) will be disturbed by revegetation activities.

Compensation as detailed in WQ6 shall be provided at a 1.5 to 1 ratio for direct impacts to SEZ areas according to TRPA policy.

Highway 28 crosses several important streams, which are used as spawning habitat/passages. Modified culverts or bottomless arches may need to be installed to encourage fish passage upstream to spawning areas. See measure WL1 – Ensure Fish Passage.

The project will not result in a reduced ability to meet TRPA Thresholds.

Threshold V-1 states that trees over 30in DBH will be favored for retention. Measure WL4 states that all vegetation removal will be minimized. Some vegetation will need to be removed to meet the purpose of the project. Approximately 74 tree removals will occur with the project. Only four of these trees are greater than 30in DBH.

NEPA Considerations

For the project all species subject to CEQA are also federal species of concern. As stated above no adverse impacts to species of concern are anticipated on the project.

NEPA also applies to potential impacts to wetlands. Wetland impacts on the project, totaling 0.087 acres (0.035 hectares), are not considered substantial.

Avoidance and minimization measures identified below will further reduce the extent and likelihood of adverse impacts.

Avoidance, Minimization and/or Mitigation Measures

The following measures shall be implemented in the course of the proposed project in order to avoid, minimize, or mitigate adverse effects to biological resources:

AV1 Establish Environmentally Sensitive Areas:
WQ1 Restrict Timing of In-Stream Activities
WQ2 Minimize Disturbance to Creek Channel and Adjacent Areas
WQ3 Containment Measures / Construction Site Best Management Practices
WQ4 De-Watering Activities
WQ5 Restore Riparian and Stream Habitat Disturbed by Construction
WQ6 "Water Quality Fees" or "Excess Coverage" Mitigation
WQ7: Restore Disturbed SEZs at a 1.5 to 1 Ratio
WL1 Ensure Fish Passage
WL2 Pre-Construction Amphibian Surveys
WL3 Work Stoppage Provision (Mountain Yellow Legged Frog)
WL4 Restrict Timing of Woody Vegetation Removal
WL5 Nesting Bird Survey
WL6 Limit Vegetation Removal
WC1 Weed Free Construction Equipment
WC2 Equipment Staging in Weed Free Areas
WC3 Weed Free Erosion Control Treatments

Table 3-11: Summary of Avoidance and Minimization Measures

Measure	Responsible for Implementation	*Notes*	*Completion Date*
AV1: Establish ESAs	Contractor and Caltrans Resident Engineer	ESAs and onsite BMPs implemented as a first order of work. No work or operation of equipment will occur within ESA areas in all construction seasons	ESAs remain in field until all project construction activities are complete
WQ1: Restrict timing of in-stream activities	Contractor and Caltrans Resident Engineer	Construction activities will be permitted below the OHWM of drainages only between July 15th and October 15th, (subject to stream conditions and permit restrictions) in all construction seasons.	October 15th of final construction season
WQ2: Minimize disturbance to creek channel and adjacent areas	Contractor and Caltrans Resident Engineer	Minimize disturbance to drainages in all construction seasons	Streambanks stabilized by October 15th of each construction season
WQ3: Containment Measures / Construction site BMPs	Contractor and Caltrans Resident Engineer	Methods shall be TRPA and RWQCB approved	Containment measures in place until all construction activities are complete
WQ4: De-watering Activities	Contractor and Caltrans Resident Engineer	Methods shall be TRPA , RWQCB, and ACOE approved. Require temporary	Temporary de-watering structures removed by October 15th of each construction season

Measure	Responsible for Implementation	*Notes*	*Completion Date*
		downstream settling basin	
WQ5: Restore stream and riparian onsite	Contractor and Caltrans Resident Engineer (implement in field) Caltrans Landscape Engineer or Biologist (Post construction monitoring)	As per Caltrans Landscape Architecture Revegetation and Erosion Control Plan for methods and monitoring	Streambanks stabilized and plantings in place by October 15th of final construction season
WQ6: Water Quality or Excess Coverage Mitigation Fees	Caltrans Project Management	Fees to be determined by current CTC costs	Mitigation fees paid prior to issuance of TRPA permit
WQ7: Restore disturbed SEZs at a 1.5 to 1 ratio	Caltrans Project Management	Fees to be determined by current CTC costs during TRPA permitting	Approved after issuance of TRPA permit (see WQ6)
WL1: Ensure fish Passage	Contractor and Caltrans Resident Engineer	Drainages free of debris and obstruction except during temporary de-watering activities	October 15th of final construction season
WL2: Pre-construction amphibian surveys	Caltrans Biologist	May require temporary work stoppage	Prior to July 15th (see WQ1) of each construction season
WL3: Restrict timing of woody vegetation removal	Contractor and Caltrans Resident Engineer	Remove woody vegetation between August 16th and October 15th. See WL4 for exception.	October 15th of first construction season
WL4: Pre-construction surveys: Nesting Birds	Caltrans Biologist	Required 30 days prior to vegetation removal if WL3 is not feasible. Requires consult with USFWS if nesting birds discovered	Prior to May 1st of each construction season requiring woody vegetation removal
WL5: Limit vegetation removal	Contractor and Caltrans Resident Engineer	Limit vegetation removal in all construction seasons	October 15th of final construction season
WC1: Weed Free Construction Equipment	Contractor and Caltrans Resident Engineer	Construction equipment cleaned of potential noxious weed before entering the project area.	Construction equipment free of weed source until all construction activities are complete
WC2: Equipment Staging in Weed Free Areas	Contractor and Caltrans Resident Engineer	Staging areas to be delineated on project plans	Construction equipment staged in weed free areas until all construction activities are complete
WC3: Weed Free Erosion Control	Contractor and Caltrans Resident Engineer (implement in field) Caltrans Landscape Engineer or Biologist (Post construction monitoring)	As per Caltrans Landscape Architecture Revegetation and Erosion Control Plan for methods and monitoring	October 15th of first construction season

AV1 Establish Environmentally Sensitive Areas: Additional direct and indirect impacts to sensitive biological resources, including wetland and SEZ resources, throughout the project area will be avoided or minimized by designating these features outside of the construction impact area as ESAs on project plans and in project specifications. ESA information will be shown on contract plans and discussed in the Special Provisions. ESA provisions may include, but are not limited to, the use of temporary orange fencing to delineate the proposed limit of work in areas adjacent sensitive resources, or to delineate and exclude sensitive resources

from potential construction impacts. Contractor encroachment into ESAs will be restricted (including the staging/operation of heavy equipment or casting of excavation materials). ESA provisions shall be implemented as a first order of work, and remain in place until all construction activities are complete.

WQ1 Restrict Timing of In-Stream Activities: To avoid direct impacts to fisheries resources, no work will be performed within fish bearing drainages within the project area (Burton, Dollar, Watson, Carnelian Canyon, and Snow (Tahoe Vista) Creeks until flows are at their seasonal low or have ceased and the streambed is dry. It is predicted that in most years, the seasonal dry period of these drainages occurs between July 15th and October 15th, however work within these drainages will be subject to stream conditions and permit restrictions.

WQ2 Minimize Disturbance to Creek Channel and Adjacent Areas: Disruption of the streambed and adjacent riparian corridor will be minimized. All stream and riparian habitat areas outside of the construction limits will be designated as ESAs as detailed in measure AV1.

Disturbed areas within the construction limits, including temporary or permanent access routes, will be graded to minimize surface erosion and siltation into streambeds. Any access routes will be removed after each construction season and the streambed and bank will be re-contoured back to the general angle of repose that existed pre- construction. Streambanks and adjacent areas that are disturbed by construction activities will be stabilized to avoid increased erosion during subsequent storms and runoff. Bare areas will be covered with mulch and re-vegetated to pre-project conditions. Construction site BMPs will be utilized to prevent contamination of the streambank and watercourse from construction material and debris as detailed in measure WQ3.

WQ3 Containment Measures / Construction Site Best Management Practices: Measures will be employed and maintained to prevent any construction material or debris from entering surface waters or their channels. BMPs for erosion control will be implemented and in place prior to, during, and after construction in order to ensure that no silt or sediment enters surface waters.

Caltrans' Standard Specifications require the Contractor to submit a Water Pollution Control Plan (WPCP). This plan must meet the standards and objectives to minimize water pollution impacts set forth in section 7-1.01G of Caltrans' Standard Specifications. The WPCP must also be in compliance with the goals and restrictions

identified in the Lahontan Water Quality Control Board's Basin Plan. Any additional measures included in the 401 certification, 1602 Agreement, 404 permit, or TRPA permit will be complied with. These standards/objectives, at times referred to as BMPs, include but are not limited to:

1. Where working areas encroach on live or dry streams, lakes, or wetlands, TRPA and Lahontan RWQCB-approved physical barriers adequate to prevent the flow or discharge of sediment into these systems shall be constructed and maintained between working areas and streams, lakes and wetlands. During construction of the barriers, discharge of sediment into streams shall be held to a minimum. Discharge will be contained through the use of Caltrans approved measures that will keep sediment from entering protected waters.

2. Oily or greasy substances originating from the Contractor's operations shall not be allowed to enter or be placed where they will later enter a live or dry stream, pond, or wetland.

3. Asphalt concrete shall not be allowed to enter a live or dry stream, pond, or wetland.

WQ4 De-Watering Activities: Depending on seasonal flows, de-watering of the streambed or culvert course and or a temporary stream diversion may be necessary where culvert rehabilitation or replacement is proposed. All de-watering activities will observe measures WQ-1, WQ-2, and WQ-3. Any intakes that may be required for water pumps associated with wetting/ irrigation/ de-watering of sites shall be screened to Lahontan RWQCB specifications to avoid the intake of fish. If de-watering of the site is deemed necessary, a temporary sediment-settling basin will be constructed downstream of the activity. All discharge waters associated with the de-watering activities will be pumped into the constructed basin before being allowed to re-enter project area drainages.

WQ5 Restore Riparian and Stream Habitat Disturbed by Construction: Prior to vegetation removal, the area will be surveyed by a qualified biologist for a complete accounting of species and their quantities present within the construction limits. Upon completion of the construction project, streambanks will be permanently stabilized and the riparian areas will be re-planted with appropriate native species. Tree and shrub species that will be used for the restoration will include willow, alder, and cottonwood. Salvaging existing wetland sod or preplanted Coir mats will be

included in the project where impacts to these environments occur. Stream channels will be re-graded to pre-construction conditions.

A restoration and monitoring plan will be prepared by the Caltrans Landscape Architecture Branch and will be submitted for approval by the appropriate agencies prior to project permitting. The restoration plan will outline and detail all planting and erosion control activities, and all associated proposed monitoring activities (including length and timing of monitoring, success criteria, remedial actions, and documentation). A draft conceptual restoration and monitoring plan is included in Appendix G.

WQ6 "Water Quality Fees" or "Excess Coverage" Mitigation: Any new land coverage in the Lake Tahoe basin is subject to TRPA regulation and may be assessed a "water quality mitigation fee" (for projects utilizing "allowable" potential coverage; $1.54 per ft^2) or to perform "Excess Coverage Mitigation" (for projects utilizing "excess" coverage). Excess land coverage is defined as existing coverage beyond the total maximum allowable base coverage, the transferred coverage, and the coverage previously mitigated under this program. Land coverage mitigation will be a required action as part of the TRPA permit. The Excess Coverage Mitigation program offers the following five options to mitigate excess land coverage:

1. Reduce coverage onsite,

2. Reduce coverage offsite,

3. Coverage mitigation fee ($6.50 per ft^2 in Placer County) used to retire land coverage within the same hydrologic zone,

4. Parcel consolidation or parcel line adjustment,

5. Projects within community plans (see TRPA Code Section 20-5),

6. Transfer coverage credits from the California Tahoe Conservancy land bank. Caltrans has coverage credits available to use. The exact amount of coverage and/or credit will be accurately determined after the design of the project has been completed and submitted to TRPA for review.

WQ7: Restore Disturbed SEZs at a 1.5 to 1 Ratio: Compensation as detailed in WQ6 shall be provided at a 1.5 to 1 ratio for direct impacts to SEZ areas according to TRPA policy.

WL1 Ensure Fish Passage: Caltrans shall ensure that the contractor conducts work operations so as to allow free passage of all age classes of salmonids within project drainages at all times. Where necessary to encourage fish passage new culverts will have bottomless arches or baffles. Corrective action shall be taken immediately (when safe based on stream flows) if the culverts create a condition that obstructs fish passage (plugged by sediment and debris for example). Any intakes that may be required for water pumps associated with wetting/ irrigation/ de-watering of sites shall be screened to Lahontan RWQCB specifications to avoid fish kills.

WL2 Pre-Construction Amphibian Surveys: A focused survey for Mountain Yellow Legged Frog (MYLF) shall be conducted by a qualified biologist within 30 days prior to the beginning of project-related activities. In the unlikely event that MYLF is found, Caltrans shall consult with USFWS regarding appropriate action to comply with the Federal Endangered Species Act before the work can be initiated. If a lapse in project related work of thirty days or longer occurs, a focused survey and, if required, consultation with USFWS will be required before the work can be reinitiated.

WL3 Restrict Timing of Woody Vegetation Removal: It is recommended that the removal of any woody vegetation (trees and shrubs) required for the project is completed between August 16th and February 28th prior to project construction, outside of the predicted nesting season for raptors and migratory birds in this area. Vegetation removal outside this time period may not proceed until a survey by a qualified biologist determines no nests are present or in use (see WL4 below).

WL4 Nesting Bird Survey: If woody vegetation removal, construction, grading, or other project-related improvements are scheduled during the nesting season of protected raptors and migratory birds (March 1st to August 15th), a focused survey for active nests of such birds shall be conducted by a qualified biologist within 30 days prior to the beginning of project-related activities. If active nests are found, Caltrans shall consult with USFWS regarding appropriate action to comply with the Migratory Bird Treaty Act of 1918 and with CDFG to comply with provisions of the Fish and Game Code of California. If a lapse in project related work of thirty days or longer occurs, another survey and, if required, consultation with USFWS and CDFG will be required before the work can be reinitiated.

WL5 Limit Vegetation Removal: Vegetation removal shall be limited to the absolute minimum amount required for construction.

WC1 Weed Free Construction Equipment: All off-road construction equipment is to be cleaned of potential noxious weed sources (mud, vegetation) before entry into the project area and the Lake Tahoe basin, as well as after entering a potentially infested area before moving on to another area, to help ensure noxious weeds are not introduced into the project area. The contractor shall employ whatever cleaning methods (typically with the use of a high-pressure water hose) are necessary to ensure that equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required. Equipment washing stations shall be placed in areas that afford easy containment and monitoring (preferably outside of the Lake Tahoe basin), and that do not drain into the forest or sensitive (riparian, SEZ, wetlands, etc.) areas.

WC2 Equipment Staging in Weed Free Areas: Whenever possible, the staging of equipment will only be done in weed free areas. Landings will be placed in forested areas rather than open flats to help prevent the establishment of noxious invaders such as yellow star thistle, which utilize open sunny areas.

WC3 Weed Free Erosion Control Treatments: To further minimize the risk of introducing additional non-native species into the area, only locally TRPA-approved plant species appropriate for the project area will be used in any erosion control or revegetation seed mix or stock. No dry-farmed straw will be used, and certified noxious weed-free straw shall be required where erosion control straw is to be used. In addition, any hydro-seed mulch used for revegetation activities must also be certified noxious weed-free.

3.12 Energy

3.12.1 Affected Environment

None.

3.12.2 Regulatory Setting/TRPA Thresholds

Not applicable.

3.12.3 Environmental Consequences

This project will not result in any unreasonable commitment of energy resources.

3.13 Geology/Soils/Paleontology/Mineral Resources

3.13.1 Affected Environment

The Lake Tahoe basin is an intermountain basin formed by the faulting of the rocks of the Sierra Nevada to the West and the Carson Range on the east. Lake Tahoe occupies a down-dropped block, or graben, that is bordered by steeply dipping faults. The steep mountains on the east and west shores of Lake Tahoe are predominantly granitic rock and partly metamorphic rock. The northern end of the basin is covered in volcanic rock of Tertiary age (formed 1.8 to 65 million years ago). Much of the southern and western sections of the basin have been modified by glaciation. The southern end of the Basin, known as Lake Valley, consists of moraines and a plain of glacial outwash deposited by the Upper Truckee River, Trout Creek and other streams. Lake Tahoe's outlet, the Truckee River, has been dammed in the past by both glacial ice and volcanic flows. Moraine terrace deposits are located north of Kings Beach, and along the moraine that parallels the Upper Truckee River.

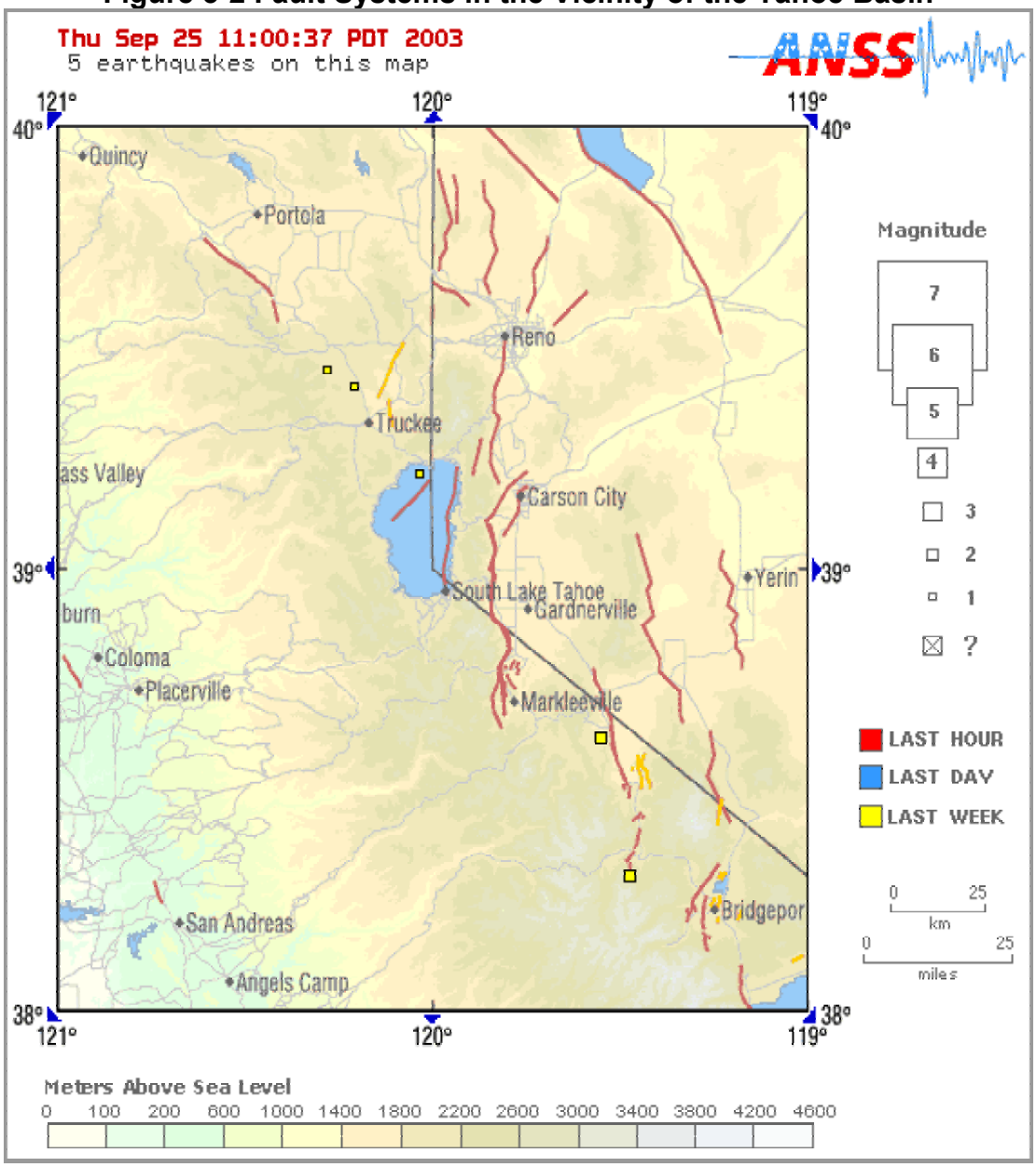
SR 28 traverses many soil associations within the project study limits. Soil associations available within the project area are generally alluvial (Gravelly Alluvial Land), morainal (Jabu), or upland (Cagwin, Jorge, Umpa, and Fugawee) soils (Soil Survey of the Tahoe Basin Area California and Nevada, 1974). Alluvial soils are usually clay, silt, sand, gravel, or similar loose material deposited by running water. Morainal soils are an accumulation of earth and stones carried and finally deposited by a glacier.

Except for Marsh soils, none of the soil series available within the project study area are listed as hydric soils (*a hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part)* on the National Resources Conservation Service's List of Hydric Soils (USDA NRCS Hydric Soils of California, 1995). The closest faults to the project limits are indicated on Figure 3-2 below. The North Tahoe fault is located within Lake Tahoe and just south of the project limits. The East Tahoe fault zone runs along the eastern edge of the Lake. The Mount Rose fault zone begins in Reno and runs south. The Genoa-Carson range fault system includes several faults between Markleeville and Carson City.

Land capabilities districts (LCDs) have been determined for all areas within the Tahoe Basin. A land capability is "the level of use an area can tolerate without

sustaining permanent (environmental) damage through erosion or other causes."[1] LCD classes range from 1 to 7, with lower LCD values indicating that the land has a low capability for development. Use of an area of land is defined as land coverage by TRPA and occurs with impervious surfaces, manufactured structures, improvements or other features that prevent precipitation from reaching the ground surface.

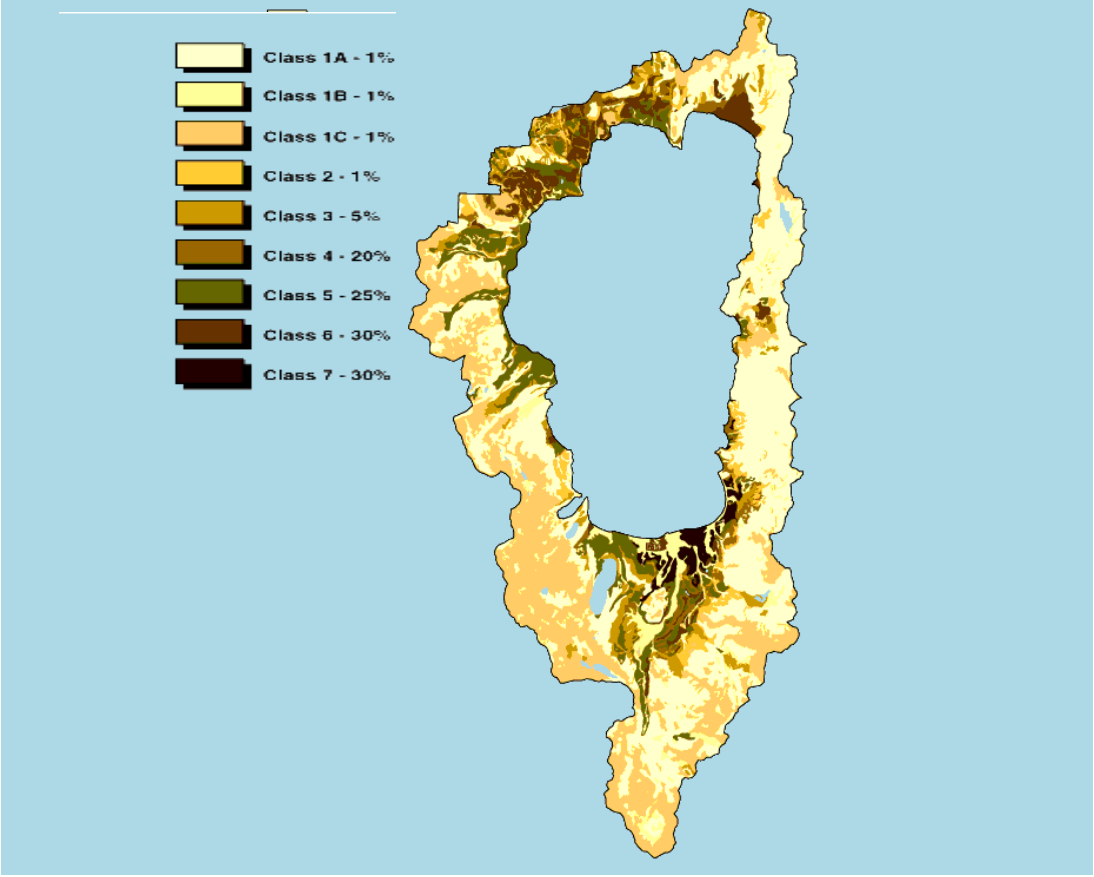
Figure 3-2 Fault Systems in the Vicinity of the Tahoe Basin



http://quake.wr.usgs.gov/recenteqs/FaultMaps/120-39.htm (Sept. 25, 2003)

[1] Land Capability Classification of the Lake Tahoe Basin, California-Nevada; Robert G. Bailey, 1974.

Figure 3-3 Land Capabilities in the Tahoe Basin



http://www.trpa.org/land_cap.html

3.13.2 Regulatory Setting/TRPA Thresholds

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include soil erosion, location on unstable or expansive soils, or exposure to risk of loss, injury or death from earthquakes, seismic ground shaking, seismic related ground failure or landslides.

The following TRPA Thresholds apply for soil conservation:

- SC1-The TRPA threshold for soil conservation requires that impervious coverage be in compliance with the coverage coefficients defined in the Land Capability Classification of the Lake Tahoe Basin California-Nevada, a guide for planning (Bailey 1974). Additional land coverage is monitored on a project basis and recorded in square feet. Coverage may be utilized directly or by coverage transfers within a related project area. An excess coverage mitigation program is in place to gradually reduce existing land coverage.

- SC2-TRPA policy requires the preservation of existing naturally functioning Stream Environment Zone (SEZ) land in their natural hydrologic condition, the restoration of all disturbed SEZ lands in undeveloped, un-subdivided lands and the restoration of the SEZ lands that have been identified as disturbed, developed or subdivided to obtain a 5 percent total increase in the area of naturally functioning SEZ lands.

3.13.3 Environmental Consequences

New features in the form of water quality and operational improvements will lead to additional hard coverage and changes to the existing landscape. However, these changes are not anticipated to result in substantial impacts pursuant to CEQA, NEPA or TRPA Code. The existing geology has been taken into consideration during the project design process. Areas that are not suitable for water quality treatment, either too steep of terrain or located in wetland, marsh and/or SEZ were eliminated from consideration.

CEQA Considerations

The project will not impact paleontological or mineral resources. In addition, the proposed improvements will not increase the likelihood of damage, injury or death from earthquakes or other geologic hazards.

Revegetation of exposed soils to prevent erosion will occur pursuant to the Erosion Control and Revegetation Plan included in Appendix G.

TRPA Considerations

TRPAs primary concern regarding soils is potential creation of additional coverage.

According to Chapter 20.3.B(8) of the Tahoe Regional Planning Agency (TRPA) code of ordinances the proposed detention basins will create impervious coverage that is not exempt from the Bailey land coverage limits. However, through subsequent meetings with TRPA, it was determined that the proposed detention as well as infiltration basins are exempt from coverage limits with the exception of the maintenance driveways that lead into these structures.

The addition of asphalt/concrete and the placement of structures during the course of shoulder widening, intersection reconstruction, and associated drainage improvements and the construction of maintenance turnouts is expected to increase

impervious land coverage within the project area. A total of approximately 34,300 ft^2 (0.79 acre, 0.32 hectares) of non-SEZ land adjacent to SR 28 is proposed to be covered by impervious surfaces. Revegetation of these areas is infeasible because these areas will be converted to "hard" impervious surfaces. In addition, a total of 6,950 ft^2 (0.16 acre, 0.06 hectares) of SEZ land, LCD 1b, will be disturbed by additional coverage (fills and structures). A total of 145,000 ft^2 (3.33 acre, 1.35 hectares) of non-SEZ and SEZ lands will be converted to hard coverage.

Water quality detention and infiltration basins, basin access routes, culvert outfall areas, and some areas of shoulder widening will require vegetation removal to construct, but revegetated with native plants and grasses upon completion. Approximately 226,600 ft^2 (5.20 acres, 2.1 hectares) of area will require vegetation removal and subsequent revegetation by applying appropriate (non-impervious) erosion control materials, as determined by Caltrans Landscape Architecture branch in conjunction with TRPA approval.

Additionally, the restoration of existing soft coverage areas within the project area (typically "soft" coverage consists of compact un-vegetated soils; typically located between SR 28 and the bike trail or between SR 28 and adjacent developments) is proposed to be accomplished by applying appropriate (non-impervious) erosion control materials, as determined by Caltrans Landscape Architecture branch in conjunction with TRPA approval. Approximately 75,800 ft^2 (1.74 acres, 0.7 hectares) of existing impervious coverage in shoulder areas and adjacent to basin access roads will be revegetated.

TRPA is concerned about how to prevent new coverage from being created after the roadway improvements are made, because there is potential for soft coverage to increase after the roadway widening. In areas where the roadway is planned to be widened, automobiles may continue to park off pavement and create new areas of compacted dirt and disturbance to adjacent roadways. In an attempt to thwart autos from creating new areas of coverage, Caltrans has agreed to incorporate rock embedded berms, to the extent feasible, just outside of the clear recovery zone (see Figure 3-4 on the following page).

Figure 3-4 Rock Embedded Berm

The purchase of land coverage credits on the project is not anticipated. However, if they are needed, Caltrans will transfer land coverage credits at a 1:1 ratio for high capability lands (LCDs 4-7) and 1.5:1 ratio for low capability lands (LCDs 1-3) pursuant to Chapter 20 of the TRPA code. In addition, according to TRPA Code Section 20.3.C(3) land transfers to provide coverage for low capability lands, LCDs 1-3, must be permanently retired as set forth in Section 20.3.C(7). Caltrans is not on the TRPA individual parcel system and is creating coverage within its right-of-way or within land that it has highway easement agreements for. The land transfer will be performed under the guidance of the California Tahoe Conservancy (CTC), a State of California land bank administration agency. Caltrans has existing coverage credits at the CTC land bank via a Memorandum Of Understanding dated October 18, 2000.

NEPA Considerations

The project will not impact paleontological, or mineral resources nor increase exposure to geologic hazards.

3.14 Hazards and Hazardous Materials

3.14.1 Affected Environment

Soil and groundwater contaminated with petroleum hydrocarbons is known to exist within the project limits. The approximate location of the contamination is 8797 N. Lake Blvd. at the corner of Highway 28 and Chipmunk St. at depths between 1 m (3 ft.) and 5 m (15 ft.) below the ground surface. This hazardous waste site may extend into Caltrans right-of-way.

Additional hazardous waste locations may exist within the project limits. A list of all potential sites is included in Table 3-12 Potential and Existing Hazardous Waste Sites on Highway 28.

Table 3-12 Potential and Existing Hazardous Waste Sites on Highway 28

ADDRESS	TYPE OF SITE
2500 Lake Forest Rd, Tahoe City, CA 96145	* Ground Water Contamination
2501 Lake Forest Rd, Tahoe City, CA 96145	* Ground Water Contamination
2554 Lake Forest Rd, Tahoe City, CA 96145	* Ground Water Contamination
1877 N. Lake Tahoe Blvd, Tahoe City, CA 96145	Small hazardous waste generator
3145 N. Lake Tahoe Blvd, Tahoe City, CA 96145	Five active Underground Storage Tanks (UST)
3147 N. Lake Tahoe Blvd, Tahoe City, CA 96145	Five active UST
2501 N. Lake Tahoe Blvd, Tahoe City, CA 96145	* Ground Water Contamination, four active UST
3205 N. Lake Tahoe Blvd, Tahoe City, CA 96145	* Four closed Leaking Underground Storage Tanks (LUST)
3760 N. Lake Tahoe Blvd, Tahoe City, CA 96145	One active UST
3600 N. Lake Tahoe Blvd, Tahoe City, CA 96145	One active UST
5000 N. Lake Tahoe Blvd, Carnelian Bay, CA 96140	* Soil & Ground Water Contamination from removed LUST, Diesel
5146 N. Lake Tahoe Blvd, Carnelian Bay, CA 96140	* Small hazardous waste generator, 3 active UST, Ground Water Contamination
5245 N. Lake Tahoe Blvd, Carnelian Bay, CA 96140	Two active UST
5372 N. Lake Tahoe Blvd, Carnelian Bay, CA 96140	One active UST
5398 N. Lake Tahoe Blvd, Carnelian Bay, CA 96140	* Two LUST
6589 N. Lake Tahoe Blvd, Tahoe Vista, CA 96148	One active UST
6872 N. Lake Tahoe Blvd, Tahoe Vista, CA 96148	Two closed UST
7010 N. Lake Tahoe Blvd, Tahoe Vista, CA 96148	* Ground Water Contamination Diesel, one active UST

ADDRESS	TYPE OF SITE
7035 N. Lake Tahoe Blvd, Tahoe Vista, CA 96148	One closed UST
7220 N. Lake Tahoe Blvd, Tahoe Vista, CA 96148	* Ground Water Contamination, one removed UST, quarterly monitoring ongoing
7360 N. Lake Tahoe Blvd, Tahoe Vista, CA 96148	Above ground storage tank (AST) Three closed UST,
7900 N. Lake Blvd, Kings Beach, CA 96143	One active UST
8001 N. Lake Blvd, Kings Beach, CA 96143	Seven active UST, Ground Water Contamination
8070 N. Lake Blvd, Kings Beach, CA 96143	Contaminated soil due to LUST
8797 N. Lake Blvd, Kings Beach, CA 96143	Soil & Ground Water Contamination Existing monitoring wells

* Cortese Listed site, UST = Underground Storage Tank, LUST = Leaking Underground Storage Tank

In addition, Yellow thermoplastic tape used for traffic striping may include hazardous levels of chromium and lead.

Finally, lead-contaminated soil may exist due to the historical use of leaded gasoline, leaded airline fuels, waste incineration, etc. The areas of primary concern in relation to highway facilities are soils along routes that have had high vehicle emissions due to large traffic volumes, congestion, or stop and go situations, during the time period when leaded gasoline was in use.

For practical purposes, most aerially deposited lead (ADL), due to vehicle emissions, would have been deposited prior to 1986. If the project area was constructed or reconstructed with clean material after 1986, it is likely that the levels of ADL contaminated soil are low.

Typically, ADL is found within the top 0.6 m (2 ft) of material in unpaved areas within the highway right-of-way. The levels of lead found along the highway right-of-way typically range from less than 0.5 up to 3,000 mg/kg and have been found as high as 10,000 mg/kg total lead, as analyzed by EPA Test Method 6010 or EPA Test Method 7000 series.

3.14.2 Regulatory Setting/TRPA Thresholds

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include creation of a public hazard, emitting hazardous emissions, handling hazardous materials near schools, being located on a site that is listed as hazardous by the California Environmental Protection Agency, resulting in a safety hazard near an airport, impairing the implementation of an emergency evacuation plan, or exposing people or structures to wildland fires.

Hazardous waste in California is regulated primarily under the authority of the Federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

The primary federal laws regulating hazardous materials/wastes are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for "cradle to grave" regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety & Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

TRPA does not maintain any thresholds for hazardous waste. The TRPA Initial Environmental Checklist asks whether or not the project will result in the creation of or increased possibility of exposure to health hazards.

3.14.3 Environmental Consequences

Project features in potential conflict with contaminated soil/groundwater will be eliminated or moved if possible. If conflicts cannot be eliminated, then the handling of the contaminated material can be covered within the contract special provisions.

Due to potentially hazardous levels of chromium and lead in yellow traffic stripes, if removal is included in the project scope, it shall be removed and disposed in accordance with the Standard Special Provisions for removal of the yellow stripes and pavement marking.

A Preliminary Site Investigation (PSI) was conducted to sample and test soils within the project limits for their ADL concentrations. The highest reported total lead values within the project limits were compared to the EPA Region 9 Preliminary Remediation Goal (PRG) for lead in residential soil. PRGs are used to estimate contaminant concentrations in environmental media (soil, air, and water) that are protective of human health, including sensitive groups, over a lifetime. The California modified PRG for lead in residential soil is 150 mg/kg.

The highest calculated upper confidence limit (UCL) for lead, within the project limits, of 66 mg/kg is less than the California modified PRG for lead of 150 mg/kg. Therefore, it is concluded that lead-impacted soil in the areas investigated does not pose a significant risk to the health of workers performing the construction activities. Further, soil materials excavated to a maximum depth of 0.6 m (2 ft) below grade surface (bgs) may be reused onsite and/or disposed of without restrictions.

CEQA Considerations

The project includes potential exposure to hazardous materials contained within traffic striping, soils and groundwater. Measures HZ1 and HZ2, provided below, will ensure that the risk of exposure to hazardous materials is minimized. No significant impacts are anticipated.

TRPA Considerations

As stated above, the IEC asks whether or not the project will result in the creation of or increased possibility of exposure to health hazards. The project will include provisions to ensure that the potential exposure to health hazards is minimal.

NEPA Considerations

Adverse impacts resulting from the handling of potentially hazardous wastes on the project are not expected. However, the measures below will further ensure the safety of workers and the public from potentially hazardous substances. Therefore, the risk associated with hazards and hazardous waste is not considered substantial.

Avoidance, Minimization and/or Mitigation Measures

HZ1: Soil and groundwater contamination are not anticipated to be encountered by the project. However, special provisions will be included in the construction contract to ensure that the proper procedures are taken during all excavation activities on the project. The special provisions will include instructions on the monitoring for and handling of hazardous materials should they be encountered on the project.

During excavation the Contractor shall monitor for any suspected petroleum hydrocarbons contamination with a photo ionization detector, combustible gas meter, or similar equipment approved by Caltrans. If any suspected contaminated materials are encountered, the contractor will immediately stop work, and the suspected contamination will be managed appropriately.

If contamination is confirmed, the Contractor will prepare a detailed Health, Safety and Work Plan for all site personnel in accordance with the DTSC and CAL-OSHA regulations. The Health, Safety and Work Plan shall include a plot plan indicating the exclusion zones and clear zones as defined by California Code of Regulations (CCR), Title 26, a schedule of procedures, sampling and testing procedures, and physical barrier; and shall be submitted at least 10 working days prior to beginning any excavation for review and acceptance by the Caltrans Resident Engineer (RE). Prior to submittal, the Contractor shall have the Health, Safety and Work Plan approved by a Civil Engineer, registered in the State of California and by an Industrial Hygienist certified by the American Conference of Governmental Industrial Hygienists (ACGIH).

Prior to performing any excavation work at the location containing material classified as petroleum impacted, all personnel, including State personnel, shall complete a safety training program which meets requirements of the Contractor's Health and Safety Work Plan covering the potential hazards as identified. The training shall be provided by the Contractor. The Contractor shall provide a certification of completion of the safety training program to all personnel.

Water from decontamination procedures shall be collected and disposed of at an appropriate disposal site by the Contractor. Non-reusable protective equipment, once used by any personnel, including State personnel, shall be collected and disposed of at an appropriate disposal site by the Contractor.

HZ2: Potential exposure to chromium and lead from traffic striping will be minimized.

A project specific Lead Compliance Plan approved by an Industrial Hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene to prevent or minimize worker exposure to lead in accordance with the California Code of Regulations Title 8, Section 1532.1 (Title 8, "Lead.") will be implemented.

Prior to performing work in areas containing lead, personnel who have no prior training, including State personnel, shall complete a safety training program, including personal protective equipment and washing facilities, as required by Title 8, "Lead."

The removed yellow thermoplastic and yellow painted traffic stripe and pavement marking residue shall be stored and labeled in covered containers in a secured enclosure at a location within the project limits for no more than 90 days until disposal, as approved by the Caltrans Resident Engineer (RE).

Labels shall conform to the provisions of Title 22 of the California Code of Regulations. Labels shall be marked with the date when the waste is generated, the words "Hazardous Waste", composition and physical state of the waste (for example, asphalt grindings with thermoplastic or paint), the word "Toxic", the name and address of the RE, the RE's telephone number, contract number, and Contractor or subcontractor. The containers shall be a type approved by the United States Department of Transportation for the transportation and temporary storage of the removed residue. The containers shall be handled so that no spillage will occur.

Removed yellow thermoplastic and yellow paint shall be disposed of at a Class 1 disposal facility in conformance with the requirements of the disposal facility operator. Testing shall include, at a minimum, (1) total Lead and Chromium by EPA Method 7000 series, (2) soluble Lead and Chromium by California Waste Extraction Test, and (3) soluble Lead and Chromium by the Total Characteristic Leaching Procedure.

If the yellow thermoplastic and yellow painted traffic stripe and pavement marking residue is transported to a Class 1 disposal facility as a hazardous waste, a manifest shall be used, and the transporter shall be registered with the California Department of Toxic Substance Control. The RE will obtain the United States Environmental Protection Agency Identification Number (US EPA) and sign all manifests as the generator within two working days of receiving sample test results and approving the test methods.

3.15 Hydrology and Floodplain

3.15.1 Affected Environment

The project area is located in the northwest side of Lake Tahoe and passes through, almost exclusively, the intervening zones found between the individual watersheds around the lake, which drain directly to the lake without first entering streams. More generally, the project area crosses 13 watersheds, 7 intervening zones, and 3 major streams. The streams are named Burton, Dollar, and Watson creeks. The project area is also located in hydrologic sub-area (HSA) 634.20; hydrologic sub-areas are larger than watersheds and cover a geographic area representing part of a surface drainage basin or distinct hydrologic feature such as a reservoir, lake, etc. HSA 634.20 covers approximately 61,415 acres with an average annual rainfall of 135.6cm (53.4in).

The types of soils present also affect hydrology. The soil in the area between Dollar Creek and Watson Creek is of hydrologic Group B, as classified by the Natural Resources Conservation Service, with moderate infiltration rate and moderately low runoff potential when thoroughly wetted; these soils have moderately slow to moderately rapid permeability. The soil in the remainder of the project area is of hydrologic Group C with slow infiltration rate and moderately high runoff potential; these soils have a slow rate of transmission.

Within the limits of the proposed project, there are six existing transverse encroachments into five separate FEMA 100-year floodplains, all classified as Special Flood Hazard Areas – Zone A. A transverse encroachment typically occurs where a roadway crosses a FEMA recorded floodplain at a single discrete location, usually by means of a bridge, box culvert or large field assembled pipe. The existing transverse encroachments occur at Burton Creek KP 2.52-2.71 (PM 1.57-1.68), Barton Creek KP 3.11-3.23 (PM 1.93-2.01), Lake Forest Creek KP 3.72-3.81 (PM 2.31-2.37), Carnelian Canyon Creek KP 9.48-9.54 (PM 5.89-5.93), Carnelian Canyon

Creek Overflow KP 9.56-9.69 (PM 5.94-6.02) and Tahoe Vista Creek KP 14.15-14.35 (PM 8.79-8.92). Floodplain mapping is included in Appendix F. It should be noted that neither Watson Creek nor Dollar Creek is designated as a floodplain at its outlet into Lake Tahoe due to steep descents into the lake.

The existing Highway 28 was constructed in 1938. Drainage features were installed based on design criteria appropriate for that era. Since that time, some highway and drainage modifications have been constructed but, for the most part, drainage facilities closely adhere to those that were part of the original construction as far as size and capacity are concerned.

Several locations along the length of Pla-28 have experienced flooding and overtopping in recent years. Many of these occurrences are the result of localized, short duration, yet very high intensity weather systems that are prevalent to the Lake Tahoe Basin. These intense storms typically result in clogged drainage systems resulting from the transport of floating debris and solid precipitation (i.e., snow and/or hail). Drainage systems are then overwhelmed resulting in highway flooding and, in some cases, overtopping.

Some modifications have been made to accommodate traction sand collection and removal. Curb, gutter, sidewalk and roadway drainage systems have also been installed along numerous stretches of the highway, particularly in business and commercial sections.

3.15.2 Regulatory Setting/TRPA Thresholds

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include changes in drainage patterns that would cause flooding, impede or redirect flows within a 100-year flood area, expose people or structures to flooding, or contribute to inundation by seiche, mudflow or tsunami.

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 CFR 650 Subpart A.

In order to comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments

- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project.

The 100-year floodplain is defined as "the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the 100-year floodplain."

Potential significant issues identified by the TRPA IEC include potential exposure to water related hazards such as seiches or floods.

3.15.3 Environmental Consequences

Under the current scope of this project, there will be highway and/or drainage modifications made at six existing transverse FEMA floodplain encroachments along SR 28 between Tahoe City (KP 1.29/PM 0.8) and the at-grade intersection of SR 28 (KP 15.0/PM 9.34) and SR 267. Five of the six encroachment locations are very near the upper boundaries of the existing floodplain. At each of these five locations, highway and/or drainage modifications should have less than substantial impact on the existing floodplain conditions. At the Tahoe Vista creek (Snow Creek) location, the existing floodplain extends some 1200 m (4000 feet) upgradient of the highway encroachment; however, no work is planned at this location that would have a substantial impact on the existing floodplain conditions.

CEQA Considerations

None of the work proposed will significantly change existing floodplain conditions. The project will increase the size of several culverts to meet existing drainage needs and reduce the likelihood of overtopping during heavy storms. Therefore, the project is anticipated to have a beneficial effect on drainage within its limits.

TRPA Considerations

No substantial change to the course or flow of 100-year floodwaters is expected.

NEPA Considerations

Although encroachments will occur within the limits of a 100-year floodplain at six locations, none of these encroachments will be adverse. The project is not anticipated to increase the risk of flooding to the public. In fact, drainage improvements on the project will reduce the potential of spot flooding during storm events.

3.16 Noise

3.16.1 Affected Environment

According to TRPAs 2001 Threshold Evaluation Report the Tahoe Basin is not in attainment with any of the three noise thresholds. Aircraft have routinely exceeded the standards in the TRPA Code. Snowmobiles and watercraft have also exceeded noise standards.

Highway noise levels were collected in 2000 by Bollard & Brennan, Inc. who employed the FHWA Highway Traffic Noise Prediction Model (FHWARD-77-108). These existing noise levels on Highway 28 are included in the table below.

Table 3-13 Existing Noise Levels on Highway 28

Location	Predicted CNEL at 300 feet
Tahoe State Park Entrance	56.1
Lake Forest Drive	54.9
Lardin Way	57.1
Carnelian Bay Avenue	57.9
Granite Road	58.3
National Avenue	59.5
Kings Beach Route 267 North	56.4
Cal-Neva Drive	56.6

The Highway 28 corridor currently exceeds the TRPA threshold of 55 CNEL at seven out of eight measurement sites within the project limits.

3.16.2 Regulatory Setting/TRPA Thresholds

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include exposing people to noise levels exceeding existing standards, exposure of people to excessive ground vibrations, or substantial increases of ambient noise levels.

For highway transportation projects with FHWA involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria.

Table 3-14 Noise Abatement Criteria for Activities Categories

Activity Category	NAC, Hourly A-Weighted Noise Level, dBA $L_{eq}(h)$	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands.
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

In accordance with the Department's *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, October 1998*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

In addition, TRPA has the following noise thresholds:

- N-1 Single event noise standards for aircraft.
- N-2 Single event noise standards for other than aircraft.

- N-3 Community Noise Equivalent Levels (CNELs).

Thresholds N-1 and N-2 do not apply to this project.

TRPA has established maximum community noise equivalent levels (CNELs) measured in dBA over a 24 hour period. TRPA thresholds establish different limits for different uses. The maximum CNEL for conservation areas is generally 50 CNEL, high density residential and highway areas are 55 CNEL, and Commercial Areas is 60 CNEL. These numbers may vary slightly depending on the location. Specific noise levels are identified in location specific TRPA Plan Area Statements or Community Area Plans.

In addition, Chapter 23 of the TRPA Code states standards shall not apply to TRPA approved construction or maintenance projects, or the demolition of structures, provided such activities are limited to the hours of 8 am to 6:30 pm.

3.16.3 Environmental Consequences

This project will not increase the capacity of the highway nor will there be a significant change in either the horizontal or vertical alignment. Therefore, this is not a Type 1 project as defined in 23 Code of Federal Regulations (CFR) Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise," and a noise study is not required.

Construction noise from the contractor's equipment is unavoidable. However, this is a temporary noise source regulated by Caltrans' Standard Specifications, Section 7-1.01I, which is included as part of the contract. The contractor is required to comply with all local sound control and noise level rules, regulations, and ordinances.

CEQA Considerations

No permanent noise impacts are anticipated as a result of the project. Temporary noise impacts during construction will be less than significant as long as the contractor follows local noise rules and regulations as required by the construction contract.

TRPA Considerations

The project will not permanently change existing noise levels and therefore will not reduce the ability to meet community noise equivalent levels specified in TRPA Plan Area Statements and Community Area Plans.

The project limits are currently not in compliance with existing TRPA noise Thresholds. Meeting TRPA noise Thresholds is not a part of the purpose and need of the project.

Construction noise between 8 am and 6:30 pm will be exempt from TRPA Code upon approval of the project. Some construction work may need to be conducted after 6:30 pm. See avoidance measure N1 below for work after 6:30 pm.

NEPA Considerations

The project will not result in a permanent increase to noise levels in the project area. Temporary noise impacts will not be substantial.

Avoidance, Minimization and/or Mitigation Measures

N1: Construction activities expected to generate high noise levels should be conducted between the hours of 8 am and 6:30 pm to ensure compliance with TRPA Code and minimize the impact on residents and businesses in the area. An exception from TRPA noise standards may be required for work on two-lane segments of Highway 28. Two-lane segments within the project limits will likely be staged during the evening to minimize traffic impacts.

3.17 Water Quality

3.17.1 Affected Environment

The water quality of Lake Tahoe is generally good and supports several beneficial uses as identified in the Lahontan Region Water Quality Control Plan (Basin Plan). In general beneficial uses of Lake Tahoe include water supply, navigation, recreation, fishing, and habitat for species.

Although nutrient concentrations are very low in the lake at present, relatively small nutrient loadings can seriously affect Lake Tahoe's water quality. This is mainly due to the lake's large size compared to its small watershed.

Lake Tahoe is the world's tenth deepest lake at 505 m (1,657 ft) with a mean depth of 313 m (1,027 ft). Lake Tahoe's large volume of 156 km^3 and its relatively small watershed are largely responsible for the lake's 770-year hydraulic retention time.

Since Lake Tahoe has a very long residence time (the average time a parcel of water spends in a reservoir), the flushing action of precipitation and runoff that benefits many other lakes cannot be relied upon to preserve Lake Tahoe. Therefore, sediments and nutrients discharged to Lake Tahoe may remain suspended in the water column or settled on the lake bottom for hundreds of years. Increased nutrient loading rates exert their full effect through a gradual buildup of nutrient concentrations over many years. The buildup of nutrients and sediments stimulates algal growth and increases the concentration of fine suspended particles, thereby decreasing clarity of the lake.

Perhaps the greatest change to Lake Tahoe in the last four decades has been the enhanced transport of sediment from the watershed and the loss of about 30 cm (12 inches) per year of clarity in Lake Tahoe's waters.

While nitrogen (N) was the primary limiting nutrient to the lake's algal population prior to the 1980s, atmospheric deposition of N directly onto the lake surface has led to a fundamental shift from nitrogen-stimulation to an almost exclusive phosphorus-stimulation. Phosphorus (P) is a unique pollutant in that it has low solubility but may have detrimental effects on water quality at quite low concentrations. There is considerable concern about P being lost from soils and transported to nearby streams and lakes. Several chemical properties of P have important implications for the potential loss of P to surface water.

- Phosphorus in soil is almost entirely associated with soil particles. When soil particles are carried to a river or lake, P will be contained in this sediment. When the sediment reaches a body of water it may act as a sink or a source of P in solution. In either case, it is a potential source of P that may eventually be released.

- Phosphorus in soil is associated more with fine particles than coarse particles. When soil erosion occurs, more fine particles are removed than coarse particles, causing sediment leaving a soil through erosion to be enriched in P.

Since P is typically transported along with the suspended solids load, the importance of sediment and erosion control become highly evident. Major pathways through which P is transported to the lake include:

- Surface water and groundwater discharge,
- Atmospheric deposition,
- Shoreline erosion.

Table 3-15 illustrates the relatively large annual P contribution from direct runoff into the lake; for comparison, the N contribution is also presented. The percentages in the table are initial estimates and further study is needed to more accurately quantify pollutant contributions of each source. Atmospheric deposition of P is estimated to account for 9.7 metric tonnes (MT) with direct loading from the watershed contributing 27.4 MT.

Table 3-15 Phosphorous and Nitrogen Loading at Lake Tahoe

Source	Flow into Lake Tahoe (%)	Total Phosphorus (%)	Total Nitrogen (%)
Stream Runoff	57	29	20
Direct Runoff (from intervening zones)	7	34	10
Groundwater	<1	9	14
Shoreline Erosion	Not Applicable	1	<1
Precipitation (Atmospheric Deposition)	36	27	56

Source: This table was compiled from various sources. The most useful reference would be Contribution of Basin Watersheds and Atmospheric Deposition to Eutrophication at Lake Tahoe, CA-NV, USA (John E. Reuter, Alan D. Jassby, Charles R. Goldman and Alan C. Heyaert.) *http://trg.ucdavis.edu/research/annualreport/contents/nutrients/article18.html*.

Caltrans Contribution to Storm Water

Caltrans maintains parts of SR 28, 89 and 267 in Hydrologic Sub-area (HSA) 634.20 and contributes only 2.4 percent to the runoff from all of its road surfaces; the estimated Caltrans area is 0.6 percent of the entire HAS (Hakim, 2003).

Highway storm water runoff contains a variety of characteristic contaminants. During storm events, rainwater first collects atmospheric pollutants and, upon impact, gathers

roadway deposits. This runoff can negatively impact the receiving waters including sedimentation, eutrophication (the proliferation of microscopic organisms and vegetation), and accumulation of pollutants in sediments and benthos organisms (organisms residing on the bottom of an area covered by water), and destruction of native species. The Caltrans Storm Water Research and Monitoring Program has collected water quality data for three consecutive years (2000-2003) from six Highway runoff-monitoring sites in the Tahoe Basin. Description of these sites and summary of the monitoring data can be found in the Annual Data Summary (CTSW-RT-030-054.36.02) that are submitted annually to the State Water Quality Control Board by the Caltrans Storm Water Monitoring Program. The Caltrans highway runoff value is the average concentration that is calculated from the highway water quality monitoring data. The average values from the 23 statewide monitoring sites (including the six located in the Tahoe Basin) are listed in Table 3-16.

Table 3-16 Caltrans Tahoe Basin Storm Water Data on Pollutant Concentrations

Constituent/Parameter	Units	Average Storm Water Runoff Concentration from Tahoe Basin Highways
Conventional		
pH	pH units	7.0
Electrical Conductivity	umhos/cm	87
Total Suspended Solids	mg/L	103
Total Dissolved Solids	mg/L	83
Hardness as CaCO3	mg/L	34
Dissolved Organic Carbon	mg/L	17
Total Organic Carbon	mg/L	20
Nutrients		
Nitrate (as N)	mg/L	1.0
Total Kjeldahl Nitrogen	mg/L	1.0
Total Phosphorus	mg/L	0.27
Diss. Orthophosphate	mg/L	0.10
Total Metals		
Arsenic	ug/L	2.5
Cadmium	ug/L	0.6
Chromium	ug/L	8
Copper	ug/L	27
Lead	ug/L	37
Nickel	ug/L	12
Zinc	ug/L	144
Dissolved Metals		
Arsenic	ug/L	0.9
Cadmium	ug/L	0.2
Chromium	ug/L	3
Copper	ug/L	13
Lead	ug/L	7
Nickel	ug/L	5
Zinc	ug/L	60

Source: Caltrans Tahoe Highway Runoff Characterization and Sand Trap effectiveness Studies, 2000-2003 Monitoring Report, June 2003. CTSW-RT- 054.36.02. Note: umhos = micromoles, mg = milligrams, ug = micrograms, L = liters.

Based on the highway storm water runoff data collected by the Caltrans Storm Water Research and Monitoring Program, pollutants that are expected to be found in runoff from the project include conventional constituents[2], hydrocarbons, metals, microbial agents, nutrients, volatile and semivolatile organics, pesticides, and herbicides. Pollutants are usually deposited on the roadway as a result of fuel combustion processes, lubrication system losses, tire and brake wear, transportation load losses, paint from infrastructure, and atmospheric fallout. Sources of specific pollutants are outlined in the following table, 3-17.

[2] Conventional constituents include BOD, $CaCO_3$, COD, TDS, TOC, TSS and TVSS, etc.

Table 3-17 Caltrans Pollutant Sources

Constituents	Primary Sources
Particulates	Pavement wear, vehicles, atmosphere, maintenance, snow/ice abrasives, sediment disturbance
Nitrogen, Phosphorus	Atmosphere, roadside fertilizer application, sediments
Lead	Auto exhaust, tire wear, lubricating oil and grease, bearing wear, atmospheric fallout
Zinc	Tire wear, motor oil, grease
Iron	Auto body rust, steel highway structures, moving engine parts
Copper	Metal plating, bearing and bushing wear, moving engine parts, brake lining wear, fungicide and insecticide application
Cadmium	Tire wear, insecticide application
Chromium	Metal plating, moving engine parts, brake lining wear
Nickel	Diesel fuel and gasoline, lubricating oil, metal plating, bushing wear, brake lining wear, asphalt paving
Manganese	Moving engine parts
Bromide	Exhaust
Cyanide	Anticake compound used to keep deicing salt granular
Sodium, Calcium	Deicing salts, grease
Chloride	Deicing salts
Sulphate	Roadway bed, fuel, deicing salts
Petroleum	Spills, leaks or blow-by of motor lubricants, antifreeze and hydraulic fluids, asphalt leachate
PCBs, pesticides	Spraying of highway right-of-ways, atmospheric deposition, PCB catalyst in synthetic tires
Pathogenic Bacteria	Soil litter, bird droppings, trucks hauling livestock/stockyard waste
Rubber	Tire wear
Asbestos*	Clutch and brake lining wear

Source: United States Department of Transportation. Federal Highway Administration. Publication No. FHWA-PD-96-032. June 1996.
** No mineral asbestos has been identified in runoff, however some break-down products of asbestos have been measured..*

3.17.2 Regulatory Setting/TRPA Thresholds

The Environmental Checklist, provided as Appendix A, includes potential issues that could lead to a significant impact pursuant to CEQA. Potential issues include violations of water quality standards (see below), waste discharge requirements or degradation of water quality.

In 1972, the Federal Water Pollution Control Act was amended making the discharge of pollutants to the waters of the United States from any point source unlawful, unless the discharge is in compliance with an NPDES permit. The Federal Water Pollution Control Act was subsequently amended in 1977 and was renamed as the Clean Water Act (CWA). The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA, as amended by the Water Quality Act of 1987, states that storm water discharges are point source discharges and establishes a framework for regulating municipal and industrial storm

water discharges under the NPDES program. Important sections of the Act are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for any federal project that proposes an activity, which may result in a discharge to waters of the United States, to obtain certification from the state that the discharge will comply with other provisions of the act.
- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. This permitting program is administered by Regional Water Quality Control Boards (RWQCB), and is discussed in detail later.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by ACOE.

The State of California's Porter-Cologne Water Quality Act provides the basis for water quality regulation within California. The Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state.

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the RWQCB is responsible for the protection of beneficial uses of water resources within its jurisdiction and uses planning, permitting and enforcement authorities to meet this responsibility.

- **NPDES Program**: The SWRCB has issued Caltrans a Statewide NPDES Storm Water Permit (Order No. 99-06-DWQ), adopted July 15, 1999, which covers all Caltrans facilities in the State. In compliance with this permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction and maintenance activities throughout the State of California. The SWMP describes the minimum procedures and practices that Caltrans uses to reduce the pollutants it discharges from storm drainage systems owned or operated by Caltrans. It outlines procedures and responsibilities for protecting water quality at Caltrans

facilities, including the selection and implementation of Best Management Practices. The Proposed Project will be expected to follow the guidelines and procedures outlined in the SWMP.

- **Municipal Separate Storm Sewer System (MS4) Program**: The USEPA defines MS4 to include a conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, storm drains) owned or operated by a state, city, town, county or other public body having jurisdiction over disposal of storm water and designed or used for collecting or conveying stormwater. EPA's Phase II Final Rule include permit requirements for designated small municipalities that maintain control of a separate storm sewer system. The objectives of the Phase II regulations are to (1) reduce the discharge of pollutants to the maximum extent practicable, and (2) protect water quality. Caltrans is the owner of an MS4 permit that includes conveyances at SR 28 and meets or exceeds the requirements of the small municipalities within the project area.

- **Construction Activity Permitting:** Caltrans construction activity is covered by the NPDES permit (Order No. 99-06-DWQ). In addition, construction activity is subject to Tahoe Basin NPDES general construction permit (Board Order 6-00-03). A notification of construction is required for enrollment for projects that have 0.4 hectare (1 acre) of soil disturbance. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1 acre of total land area must comply with the provisions of this NPDES Permit and develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). Implementation of the plan starts with the commencement of construction and continues through the completion of the project. Upon completion of the project, the applicant must submit a Notice of Termination to the RWQCB to indicate that construction is completed.

TRPA is also designated by California, Nevada, and the USEPA as the area wide water quality planning agency under Section 208 of the federal Clean Water Act. It adopted a bi-state plan, currently entitled Water Quality Management Plan for the Lake Tahoe Region (208 Plan). Most appropriate provisions of the 208 Plan, however, are incorporated into the Water Quality Control Plan for the North Lahontan Basin.

TRPA water quality thresholds are as follows:

- WQ1-Decrease sediment load as required to attain turbidity values not to exceed 3 Nephlometric Turbidity Units (NTU) in littoral Lake Tahoe. In addition, turbidity shall not exceed 1 NTU in shallow waters of Lake Tahoe not directly influenced by stream discharges.

- WQ2-Average Secchi depth, December-March, shall not be less than 33.4 meters.

- WQ3-Annual mean phytoplankton primary productivity shall not exceed 52 gC/m2/yr. California: algal productivity shall not be increased beyond levels recorded in 1967-1971, based on a statistical comparison of seasonal and annual mean values.

- WQ4-attain a 90th percentile value for suspended sediment of 60mg/L.

- WQ5-Dissolved inorganic nitrogen, 0.5 mg/L; dissolved phosphorous, 0.1 mg/L; dissolved iron, 0.5 mg/L; suspended sediment, 250 mg/L.

- WQ6-Surface water infiltration into the groundwater shall comply with the Uniform Regional Run Off guidelines. For total nitrogen, 5 mg/L; total phosphorous, 1 mg/L; total iron, 4 mg/L; turbidity, 200 NTU; and grease and oil, 40 mg/L.

- WQ7-For other lakes in California-Nevada, the standards are the same as the tributary standards.

For Caltrans projects, a Memorandum of Understanding (MOU) between TRPA and the Lahontan Regional Water Quality Control Board acknowledges that Lahontan is the lead regulator for water quality. Lahontan water quality thresholds can be found in the Lahontan Basin Plan. The Lahontan numeric effluent limits for runoff discharged to infiltration systems mirrors TRPA Threshold WQ-6. The Lahontan numeric effluent limits for surface discharges are similar to TRPA Threshold WQ-5 but also place limits of 20 NTU for turbidity and 2.0 mg/l for grease and oil.

3.17.3 Environmental Consequences

The project's purpose and need is intended to treat storm water runoff transported by drainage systems and running off of the roadways maintained by Caltrans. The addition of sand collection vaults, infiltration basins, detention basins and bio-swales will reduce many of the pollutants currently entering Lake Tahoe from Highway 28.

In addition, the project will not increase traffic volumes. Therefore, mass loading into the receiving water bodies due to vehicular activity on the traveled way is not expected to increase as a result of this project.

Infiltration basins on this project are adjacent to existing outfalls and will redirect all or some of the runoff from the outfall into the basin. Where possible, a bypass will be constructed on the outfall upstream of the basin. The bypass will direct runoff into the basin until it is full. Outfalls on this project that will convey additional runoff (primarily sheet flow that has been collected and conveyed to the outfall) will be evaluated to ensure that the capacity is adequate to convey the additional runoff. Once the basin or the outfall bypass is full any additional runoff will be directed to the historical outfall. During times of extreme precipitation, the basin overflow and emergency drain will direct water back to the historical outfall to prevent the exceedence/failure of the basin and to avoid flooding or other related hazards. Ditches constructed to and from basins will be sized to adequately handle the design storm. Outfalls on this project that will not convey any additional runoff after construction is complete will not be improved other than with the addition of erosion control/water dissipation measures at pipe outlets, where necessary.

The project will add some impervious surface area by adding pavement for traffic shoulders, left-turn pockets, maintenance pull-outs for sand vaults, transit stops, and possibly for the inclusion of maintenance roads to proposed basins. The new impervious surface is not expected to greatly increase the volume of storm water runoff in the Hydrologic Subarea that reaches Lake Tahoe. Furthermore, as stated above, the project will be incorporating to the maximum extent feasible Caltrans approved BMPs, including bio-swales, basins and sand collection vaults, to treat storm water runoff prior to reaching the lake. Due to the limited amount of space for basins and bio-swales between the highway and Lake Tahoe, some pollutants and sediments will continue to reach the lake from the highway facility. Non-conventional BMPs, such as technologically advanced and alternative treatment measures, may be capable of further reducing the pollutants and sediments reaching the lake. However, a separate project would be required to test and implement these non-conventional BMPs.

Although the increased volume of runoff from the added project's impervious traveled way is indeed very small, the added peak flows may cause or contribute to down stream erosion. Erosion may also occur due to the removal of vegetation for basins and bio-swales. The design of the project will incorporate rock lined channels

to convey water between vaults and basins. In addition, discharge points from the basins will utilize rock to dissipate energy and reduce the likelihood of erosion.

There may be a small water quality benefit due to the presence of 3.6 m (12 ft) wide shoulders. The shoulders provide space for disabled vehicles to be moved such that they do not block traffic and thereby allow highway speeds to be maintained. This reduces pollutants produced by vehicles as a result of stop-and-go traffic. Also, emergency vehicles will be able to utilize the shoulders in response to accidents and spills. However, 3.6 m (12 ft) wide shoulders are only expected in limited locations on the project.

Nearly all work in streams during construction will occur at locations where culverts cross under the highway and are planned for replacement or lining. If possible, all work in streams will be done after seasonal flows have stopped (mid summer to early fall see also measures WQ-1, WQ-4, and WL-1 in the Biological Resources section of this chapter).

In perennial streams, a temporary diversion will be required and one or more of the following options will be used:

- A new culvert will be constructed adjacent to the existing culvert (streamflow will continue through existing culvert during construction of new culvert). Upon completion of the new culvert, the stream channel will be rerouted and diverted through the new culvert. The original culvert will be abandoned (plugged).

- A coffer dam will be constructed and a temporary pipe or channel will be installed to direct streamflow to an adjacent cross culvert.

- If streamflow is minimal, a coffer dam will be constructed upstream of the culvert and streamflow pumped into a water truck for discharge into the downstream channel or onto adjacent soil for infiltration/evaporation.

- At culverts that will be lined, construction may occur in a live stream without diversion.

For additional information on water diversions, please reference The Caltrans Storm Water Quality Handbook "Construction Site BMP Manual" (dated 3/03). It is available on the world wide web on the following website:

http://www.dot.ca.gov/hq/construc/stormwater/CSBMPM_303_Final.pdf

The aforementioned manual describes Clear Water Diversions in Section NS-5. Stream diversions start on page 8 of NS-5, or page 169 of the manual.

Given all of the considerations described above, the project will not cause substantive changes or degradation of water quality from existing conditions.

CEQA Considerations

Increased impervious surfaces created by the project will have a negligible effect on water quality. The potential for increased erosion exists due to the earthwork required for the project and some increases in runoff volumes. However, the design of the project will ensure that drainage facilities are adequately sized and lined with materials that prevent erosion to the greatest extent feasible. In addition, avoidance and minimization measures V1, V2 and V3 (see Section 3.9 Aesthetics) will ensure that disturbance to existing terrain and vegetation is fully mitigated. Specifics on erosion control and vegetation are included in Appendix G. Measures WQ1 through 7 contained in Section 3.11 Biological Resources provide further measures to protect water quality. In general, the combination of sand collection vaults, infiltration basins, detention basins and bio-swales proposed by the project will improve the quality of water discharged from Caltrans facilities.

TRPA Considerations

This project alone cannot be expected to result in meeting all of the TRPA Thresholds. As noted above, Caltrans contributes only 2.4 percent of the runoff in HAS 634.20 from its road surfaces. This includes runoff from Routes 28, 89 and 267. The amount of runoff from SR 28 is only a fraction of this 2.4 percent. However, the project will greatly improve storm water treatment on and along SR 28. Newly installed drainage facilities will capture many pollutants before they enter the lake. These improvements will greatly outweigh any negative impacts associated with newly created impervious surfaces. Furthermore, a discussion of new impervious surfaces and compensation for them is provided in Section 3.13 Geology/Soils/Paleontology/Mineral Resources. No adverse impacts are anticipated.

NEPA Considerations

Project features will not substantially degrade water quality. Furthermore, the combination of sand collection vaults, infiltration basins, detention basins and bio-swales proposed by the project will improve the quality of water discharged from Caltrans facilities.

Chapter 4 Cumulative Impacts

Regulations implementing the procedural provisions of NEPA define cumulative effects as: "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or persons undertakes such other actions" (40 CFR sec 1508.7).

According to the State CEQA Guidelines, cumulative impacts refers to two or more individual effects, which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (Section 15355).

This section evaluates cumulative effects associated with the proposed project to environmental resources. The study area analyzed in this evaluation is the "north shore" area of Lake Tahoe in the State of California, roughly bounded by the SR 28/SR 89 junction on the west, the California-Nevada State line to the east, by the waters of Lake Tahoe on the South, and by the hydrographic Lake Tahoe Basin boundary on the north. This area was selected for analysis because cumulative development in this area that would be supported by the proposed action, although it is recognized that impacts in this area have the potential to contribute to impacts within the entire Lake Tahoe basin.

4.1 TRPA Land Use Policy

The Tahoe Regional Planning Compact calls for development of a Regional Plan that establishes a balance, or equilibrium, between the natural environment and the human environment. Specifically, the Compact calls for "a land use plan for the integrated arrangement and general location and extent of, and the criteria and standards for, the uses of land, water, air, space and other natural resources within the Region, including but not limited to indication or allocation of maximum densities and permitted uses." TRPA has established environmental threshold carrying capacities that define the capacity of the natural environment and set specific environmental performance standards related to land use. The thresholds, however, do not define the

maximum populations, densities, permitted uses, or other land use criteria for the human environment; this is the function of the Regional Plan.

In general, the Land Use Element sets forth the fundamental land use philosophies of the Regional Plan, including: the direction of development to the most suitable locations within the Region; maintenance of the environmental, social, physical, and economic well-being of the Region; and coordination of the Regional Plan with local, state, and federal requirements. The following broad land use "goals" are outlined in the Land Use element (Specific policies addressing these goals and defining the maximum populations, densities, permitted uses, and other land use criteria are also outlined in the Land Use element and community plans, but will not be reviewed in this document):

- Restore, maintain and improve the environmental quality of the Lake Tahoe Region for the visitors and residents of the region.
  - Lake Tahoe is a unique natural resource in a spectacular natural setting. The long-term economic and natural health of the Region depends on the maintenance of this unusual quality. While previous land use planning efforts have concentrated on regulating the quantity of permitted development, TRPAs regional plan emphasizes an improvement in the quality of development in the Region and in the quality of the natural environment.

- Direct the amount and location of new land uses in conformance with the environmental threshold carrying capacities and the other goals of the Tahoe Regional Planning Compact.
  - Population growth in the Region will be guided by the limitations on land use set forth in the General Plan. This Plan identifies land use, densities, traffic volumes, urban boundaries, and other factors that indirectly determine the population at any given time. All of these factors have been set to ensure compliance with the environmental thresholds.
  - Since the development permitted under this Plan is generally limited to the existing urban boundaries in which uses have already been established, the concept of this land use plan is directed toward regulating in fill and redirection. The intent of this system is to provide flexibility when dealing with existing uses, continuation of acceptable land use patterns, and redirection of unacceptable land use patterns.

- All new development shall conform to coefficients of allowable land coverage as set forth in "The Land capability classification of the Lake Tahoe Basin, California/Nevada; A Guide for planning, Bailey 1974".
  - This goal calls for policies, which limit allowable impervious land coverage associated with new development. These policies set allowable land coverage by applying the recommended Bailey land coverage coefficients to specifically defined and related areas. In some instances, provisions are made to allow additional coverage by transfer. The transfer programs shall operate by a direct offset method. In addition, land capability is one of the basic factors in

determining the suitability of lands for development and appropriateness of land uses.

- To provide to the greatest possible extent, within the constraints of the environmental threshold carrying capacities, a distribution of land use that ensures the social, environmental, and economical well being of the region.
  – The Tahoe Regional Planning Compact and extensive public testimony call for TRPA, along with other governmental and private entities, to safeguard the well-being of those who live in, work in, or visit the Region.

- Coordinate the regulation of land uses with the land uses surrounding the region.
  – To minimize the impacts on one another, the Tahoe Region and its surrounding communities should attempt to coordinate land use planning decisions. This goal is especially pertinent with respect to major land use decisions immediately adjacent to the Region, which may have significant impacts on the Region and affect the ability of TRPA to attain environmental thresholds.

4.2 Summary of Past, Present, and Reasonably Foreseeable Future Actions

4.2.1 Summary of Caltrans Transportation Projects

Caltrans internal files were reviewed for information about recent and current projects within the north Lake Tahoe area. The Tahoe Improvement Program website includes the latest information on Caltrans projects in the Basin (http://www.dot.ca.gov/dist3/projects/tahoe/eiprj.htm). Additionally, Caltrans "State Route Transportation Concept Reports (TCRs)" were reviewed for information regarding future plans for state routes within the north Lake Tahoe area. Caltrans' TCRs document the planning strategies of the long range plans identified by the regional transportation agencies and metropolitan transportation organizations within a given state highway corridor, and establishes a 20-year planning concept. As state highway routes often pass through several regional planning agency jurisdictions, the TCR assimilates the regional strategies into one corridor specific planning document.

For the proposed SR 28 Roadway Rehabilitation and Water Quality Improvement Project, TRPA is the responsible regional transportation planning agency within the Lake Tahoe basin for transportation issues and takes the lead role in identifying transportation strategies and projects. Due to the environmentally sensitive nature of the Lake Tahoe basin, air quality, land coverage, and water quality impacts are carefully evaluated for each project. Adverse effects of soil erosion make projects requiring earthwork particularly sensitive. Additionally, in order to preserve the

unique character of the basin, TRPA typically does not pursue additional roadway capacity. As a result, future plans for improvements along state highways within the Lake Tahoe Basin must also comply with TRPA constraints. Actions undertaken by Caltrans within the Lake Tahoe basin are subject to TRPA review and permitting and must conform to TRPA environmental thresholds for approval. The following is a summary of proposed Caltrans county projects within the Lake Tahoe north shore area.

PLA 28: SR 28 extends 11.0 miles from SR 89 at Tahoe City to Kings Beach, where it intersects SR 267, and east to the California/Nevada border. It is the primary highway linking the north Tahoe communities of Tahoe City, Lake Forest, Carnelian Bay, Tahoe Vista, and Kings Beach.

Caltrans' "State Route 28 Transportation Concept Report (Caltrans, 1997)" breaks SR 28 into three segments. Segment 1 is a two-lane conventional highway extending from SR 89 at Tahoe City (PM 0.00) to Granite Road near Tahoe Vista (PM 7.70). Future route concept improvements identified for this segment in Caltrans' TCR include minor safety and operational improvements to reduce accidents and provide the highest level of service on the existing facility, to encourage greater public transit use, and to support local plans for Transportation Management Strategies such as shuttle services, and transit incentives (Caltrans, 1997).

Segment 2 is a four-lane conventional highway extending 2.6 miles from Granite Road near Tahoe Vista to Coon Street in Kings Beach (PMs 7.70-10.20). Members of the community requested Placer County Planning Department to study the feasibility of reducing the number of lanes from four to three lanes, providing a continuous median left turn pocket. Future route concept improvements identified for this segment in Caltrans' TCR include minor safety and operational improvements to reduce accidents and provide the highest level of service on the existing facility, to encourage greater public transit use, and to support local plans for Transportation Management Strategies such as shuttle services, and transit incentives (Caltrans, 1997).

Segment 3 is a two-lane conventional highway extending from Coon Street in Kings Beach (PM 10.20) to the California/Nevada State line (PM 11.00). Future route concept improvements identified for this segment in Caltrans' TCR include minor safety and operational improvements to reduce accidents on the existing facility, to

encourage greater public transit use, and to support local plans for Transportation Management Strategies such as shuttle services, and transit incentives.

The current proposed action is to reduce soil erosion, comply with storm water pollution control regulations for the Tahoe Basin, and improve drainage systems in order to improve the quality of runoff water. The project proposes to construct water quality improvements, bike lanes and operational improvements along SR 28, except in the area of Kings Beach (TRPA EIP Project #998). A separate Placer County water quality improvement project is currently in planning stages for the segment between the SR 267/SR 28 intersection east to Chipmunk Street in Kings Beach (TRPA EIP Project #s 787 and 10060).

A Caltrans project that would install a traffic signal at the National Avenue intersection with SR 28 is currently in the final design stage.

The Kingvale Satellite Operations Center (SOC) and Traffic Operation System (TOS) project proposes to upgrade and install TOS components such as Closed Circuit Television Cameras, Changeable Message Signs, Highway Advisory Radio Antennas, Flashing Beacons, and Traffic Monitoring Stations as various locations along SR 28, 89, 267, and Interstate 80.

PLA 267: SR 267 is a north-south undivided two-lane conventional highway 12.69 miles in length, running from near Truckee in Nevada County, to SR 28 in Kings Beach. Within the north Lake Tahoe basin, SR 267 extends 3.23 miles from Brockway Summit and descends 945 feet to its intersection with SR 28 in Kings Beach. SR 267 is a primary highway linking the Truckee area to the communities of north Lake Tahoe. The short term future route concept improvements identified for this segment of SR 267 in Caltrans' "State Route 267 Transportation Concept Report (Caltrans, 2001)" includes widening the existing shoulders to 8 feet to allow for additional snow removal storage on the highway and to allow slower vehicles temporary use of the shoulder to permit faster vehicles the opportunity to pass. The ultimate concept improvement is to construct a truck-climbing lane in the northbound direction over Brockway Summit. Additionally the concept includes minor safety and operational improvements as required, as well as drainage improvements and erosion control EIP mandated improvements.

Three known Caltrans projects are proposed along SR 267 between Brockway Summit and SR 28. Both projects are being undertaken to reduce soil erosion, comply with storm water pollution control regulations for the Tahoe Basin, and

improve drainage systems in order to improve the quality of runoff water. The first project is located between Brockway Summit KP 10.7 (PM 6.7) and KP 11.7 (PM 7.3) north of Kings Beach. A Final Mitigated Negative Declaration (CEQA) was adopted for this project in August 2002 and was completed in the 2004 construction season (TRPA EIP Project #14). The project did not have direct impacts to sensitive plants, rare plant communities, SEZs, wetlands or jurisdictional water of the U.S. The project had some minor indirect impacts to wildlife species due to woody vegetation removal, but did not significantly alter the species richness, relative abundance, and pattern of vegetation adjacent to SR 267.

Another project within the limits of KP 10.7 (PM 6.7) and KP 11.7 (PM 7.3) proposes to install full-scale BMP pilot projects to evaluate the effectiveness of new media filter technologies for treating storm-water runnoff from highway facilities. The project consists of retrofitting four existing infiltration basin sites (constructed last year), with filter media testing basins. All work will take place within the existing State right-of-way or United States Forest Service easement area.

The other two projects are proposed to take place between KP 11.7 (PM 7.3) and the SR267/28 intersection in Kings Beach, and are currently beginning the environmental analysis stage. Impacts to sensitive resources as a result of these projects have yet to be determined.

4.2.2 Placer County Projects with a CEQA Action

The State Clearinghouse website tracks all projects with a CEQA action. Below is a listing of all substantial projects on the State Clearinghouse website between January 2001 and April 2005. Additional minor projects such as permission for recreational pier use, transfers of land coverage with no net increase, Open Space Acquisitions, and other categorically exempt projects are not included below. Some of these projects may be repeated in subsequent sections, as they are also Placer County or EIP projects.

Cedar Grove Apartments Affordable Housing Project

The proposed development would consist of approximately 152 rental housing units. All of the units would be affordable to families with incomes at or below 80 percent of the median income. An internal looped roadway system with separate points for both entry and exit is proposed as part of the project. The main access to the complex from National Avenue. Points of access to the complex from National Avenue that

are being considered include: Grey Lane and Toyon Road, with Wildwood Road via Estates Drive being an alternative or emergency access road. A Class 1 bike trail and onsite parking that would comply with Placer County parking standards, are also proposed for the site.

Alpine Knolls Subdivision

Proposed subdivision of 27 acres into 19 residential parcels ranging in size from 14,866 sq. ft. to 51,849 sq.ft. A total of 12.38 acres is proposed to be set aside as open space lots commonly owned by the Home Owners Association. Project includes rezoning to increase the open space zoning on the parcel from 4.6 to 12.38 acres. (northwest of Tahoe City at Bear Creek)

Polaris Creek Meadow Restoration Project

The California Tahoe Conservancy (CTC) is considering restoring the wetland area of Polaris Creek Meadow currently impacted by the emplacement of fill. The proposed restoration project would establish the wetland function of this portion of the meadow. The previously disturbed site would be restored to provide wildlife habitat for native species and would allow Polaris Creek better access to its floodplain at the project site and to improve fish habitat in Polaris Creek by improving water quality. The proposed wetland area would help improve water quality by removing sediment and nutrient from flows that drain into Lake Tahoe. The re-establishment habitat would enhance the visual/ aesthetic qualities of the site by replacing the highly disturbed fill with a natural system that also provides wildlife habitat. The original wetland meadow would be re-established by removing the existing contaminated fill from the site and re-vegetation with native plant species. The proposed project will assist in achieving the Tahoe Regional Planning Agency's goal to restore 1,100 acres of former stream environment zone lands within the Tahoe Basin. (CTC project, Parcel 093-020-014 in project limits)

Tahoe Estates Erosion Control Project

The project consists of the granting of funding to assist in the planning of a project that will implement sediment source control measures and treat storm water prior to its reaching Lake Tahoe. (CTC Tahoe Estates/Tahoe Vista project)

Upper Cutthroat Erosion Control Project

The project area is steeply sloped hillside subdivided into small residential lots. Approximately half of the total number of roadside drainages are directed straight down slope resulting in erosive flow velocities on the unprotected soil roadside swales. The project will install roadway shoulder improvements, storm water conveyance and detention system, revegetation and other drainage improvements. (CTC Kings Beach project)

North Tahoe High School/Middle School-New Parking Lot

A new 139 space parking lot is planned for an existing school site. (in Tahoe City by the Tahoe Truckee Unified School District)

Lakeside Trail Phase II - Outlet Crossing

Originally the proposed alignment, the Truckee River Outlet Crossing was to connect to the existing Truckee River Trail on the east side of the Bridge at Highway 89, and then proceed through the Bridgetender parcel (APN 94-540-16), extending across the Truckee River Dam (APN 94-540-17), and terminating just east of Izzy's Burger Spa (APN 94-190-29). The proposed trail alignment would encroach on lands owned by State of California and operated by California State Parks (Bridgetender). The proposed dam crossing would also encroach onto lands owned by Sierra Pacific Power Company and operated by the United States Bureau of Reclamation (BOR).

A new alternative will have a trail crossing attached to the Tahoe City Dam on the Lake Tahoe side. Previously it was proposed that the alignment would cross the Truckee River via a new pedestrian/bicycle bridge constructed adjacent the Truckee River Bridge along State Route 89. The additional alternative would result in a relocation of the crossing. (in Tahoe City by the Tahoe City Public Utility District)

Sewer Line Replacement Project, UC Davis Fish Hatchery / Tahoe Research Facility, Lake Forest

This project consists of the replacement of leaking sewer line in its same approximate location. (Lake Forest, Placer County Planning Department)

Department of Boating and Waterways Restroom Relocation and Replacement Project

The applicant is proposing to remove the existing structure (restroom) and reconstruct a new 1,028 square foot restroom. The new restroom will be relocated to the northern

portion of parcel 090-135-14. The proposed structure will enhance the scenic view by opening up the view of Lake Tahoe from Highway 28 and will be constructed of materials that better blend in with the surrounding environment. (Kings Beach, Boating and Waterways, Department of)

Lakehouse Mall Property Pier Construction

The project consists of the construction of a new 400-foot long pier. (Fish and Game, Tahoe City)

Sierra Boat Co., Inc. Emergency Dredging

The project consists of emergency maintenance dredging to allow access for law enforcement and search and rescue patrol boats. (Lahontan, Carnelian Bay)

Metas Property Shoreline Protective Structure

The purpose of the project is to demolish and reconstruct shoreline protective structures, static and dynamic components with native revegetation. (Lahontan, Agate Bay)

Coordinated Resource Management and Planning for the Endangered Plant, Tahoe Yellow Cress

The project involves a coordinated interagency and private stakeholder effort to implement a Conservation Strategy for the purpose of sustaining and enhancing the population of the State of California listed endangered plant, Tahoe yellow cress (Rorippa subumbellata). (CTC, lakewide)

Kings Beach Commercial Core Improvement Project

The project consists of the upgrading of SR 28 to include main street beautification features. (Placer County Planning Department)

Snow Storage License Agreement

The CTC is preparing to execute a license agreement to provide areas for the storage of seasonal snow from an adjacent urban commercial parcel. This seasonal winter use will provide water quality benefits in an urban forest interface environment. Annual spring inspections will be conducted to monitor these temporary snow storage activities. The applicable TRPA Best Management Practices will be required to

ensure protection of the Conservancy parcels as water quality benefits are achieved. (CTC)

Coon Street Site Restoration Project

The project consists of 1) demolition of existing improvements 2) revegetation of disturbed and compacted soils and installing landscape fencing to prevent further resource damage and to help restore the property to a more natural condition. (CTC)

North Tahoe Beach Center Replacement Project

The proposed project would consist of the partial reconstruction and reconfiguration of facilities at the site of the former North Tahoe Beach Center in Kings Beach on the north shore of Lake Tahoe. The proposed project involves parking reconfiguration, installation of new landscaping and day-use recreational amenities, construction of a group picnic shelter and restroom facilities. (CTC, SR28/267)

North Tahoe Self-Storage

Phase II of the self storage project on National Avenue includes one additional building of approximately 70 units, an office and a carport (Phase I with 194 units has been completed.). (National Avenue)

Dollar Point Utility Underground Project

The project consists of the conversion of overhead utilities to underground facilities. Relocated utilities will include Sierra Pacific Power, Charter Communications, and SBC. (Tahoe City Area)

NTPUD State Recreation Area Public Park

The NTPUD proposed to demolish and replace existing restroom facilities.

SW Gas Tahoe Vista Mobile Home Park Service Project

South West Gas proposes to install a new natural gas service to the Tahoe Vista Mobile Home Park.

Talmont Resort Well Project

The Talmont Resort proposes to develop a water supply well for resort. (Tahoe City)

Talmont Landing Restoration Project

The California Tahoe Conservancy proposes to till compacted soils on land previously used as a boat landing. The work will be done with hand tools as well as mechanized equipment. The area will be seeded with a native seed mix and mulched with organic material collected from the surrounding area after construction. Trees and shrubs indigenous to the area will also be planted. (CTC, Tahoe City)

North Shore Restoration Projects

The California Tahoe Conservancy proposes to revegetate disturbed and compacted soils and install landscape fencing to prevent further resource damage and to help restore the property to a more natural condition. (CTC)

Lake Tahoe Shorezone Ordinance Amendments

The Tahoe Regional Planning Agency (TRPA) is preparing a new Environmental Impact Statement (EIS) to consider the effects of the amended shorezone ordinances on development in the shorezone. The existing TRPA Code of Ordinances requires TRPA to reconsider location standards for piers, mooring buoys, boat ramps, floating docks and platforms once a study assessing the impacts resulting from the construction and use of structures on fish habitat and spawning areas in Lake Tahoe and the mouths of its tributaries have been completed. The EIS will include, as a substantial portion of the document, a cumulative impact analysis of all activities anticipated in the shorezone. The purpose of this is to disclose all forseeable impacts that could be attributable to reconsidering the location standards for certain shorezone structures and to disclose the cumulative impacts created by overall development in the shorezone. (TRPA)

Tahoe Vista Recreation Area

The North Tahoe Public Utility District proposes to redevelop existing the recreation area to upgrade facilities for improved public access, safety and help protect ecological resources. (NTPUD, Tahoe Vista)

Tahoe City Public Utility District, Community Trail Intertie

The project involves constructing a new recreational trail alignment that will connect/link three existing trail systems (Truckee River, Lake Tahoe, and downtown Tahoe City), which are located to the south, west, and east of Tahoe City. The new

trail will be a community trail located between the lakeshore and State Routes 28 and 89. Bicycles and pedestrians can use the trail. It will start where the North Shore Trail presently ends, pass through Tahoe State Recreation Area, along the lake shore, behind Commons Beach, pass along the west edge of the existing parking lot, throught the Tahoe Marina Lodge parking area, extend along Mackinaw Road for approximately 150 feet, continue westerly along the southern end of the existing parking lots along the lake shore then on to State Route 89. The project includes mitigating impacts to land use, public services and utilities, shore zones, wetlands, flood plains, vegetation, and visual resources. The new trail will result in beneficial impacts on recreation, soils, and transportation. (Tahoe City)

North Tahoe Public Utility District, North Tahoe Regional Park Soccer, Track, and Field Facility

The North Tahoe Public Utility District is proposing to construct a regional soccer field and track facility near Gun Club Road in the North Tahoe Regional Park in Tahoe Vista, California. The proposed facilities will include a soccer field, and other track facilities, including 2 long jump / triple jump pits, a high jump pit, 2 pole vault pits and a shot put area and support parking.

UC Davis Tahoe Environmental Research Center

UC Davis proposes to construct a new, 13,600 gross square foot research facility with a single-story support building including approximately 2,800 gross square feet and a 35-space parking lot. The proposed facility would be used for the continuing study of the ecology of Lake Tahoe. The proposed project includes the restoration of an existing historic fish hatchery building for use as an education center, improvement of the fish hatchery's existing access roads and parking lot, and land coverage reduction and site restoration adjacent to the fish hatchery building. (University of California)

Prescribed Burn Program at Lower Truckee River

The California Tahoe Conservancy (CTC) proposes a program of prescribed burns within its holdings in the Lower Truckee River Watershed of the Lake Tahoe Basin. The program would reintroduce fire as a forest restoration management tool to modify and reduce project area fuel material, restore a resilient forest structure, and improve wildlife habitat. The program would include a series of planned controlled burns conducted over a period of several years. A sequence of follow-up burns would be required within a period of seven to twelve years to maintain the desired habitat.

More intensive treatments will occur along the project area margins to create an area, defensible against the spread of wildfires, between the adjacent developed properties and CTC land. Burn sites within the 30-acre project area would be kept under control through the manual construction of fire barrier lines and use of existing roads and cleared areas as control lines. Emergency suppression equipment would be available at the project site for immediate response if the burn goes out of its prescribed limits. A smoke management plan, fire escape plan, and public information plan have been developed to address the potential hazards posed by a prescribed burn on the project site and to protect public health and safety. (Fairway Drive and Highway 28, CTC)

Kings Beach Student Activity Center

The proposed project involves the construction of a Student Activity Center as an addition to the existing Kings Beach Elementary School. The building will provide space for a variety of school and community functions including art, music, and recreation activities, Boys and Girls Club activities, public meetings and gatherings, and other related activities. The building is a single-level building that is approximately 21,000 square feet in size and includes a gymnasium and stage, classrooms and offices, kitchen, and accessory.

Commons Beach Strategic Plan Implementation, Phase One

The proposed Commons Beach project is identified as projects 106 and 10127 in the Environmental Improvements Program (EIP) initiated by the Tahoe Regional Planning Agency. EIP Project 106 (scenic) is intended to redevelop steeper slopes behind Commons Beach, adding landscaping and screening between Lake Tahoe and the commercial development in downtown Tahoe City. EIP Project 10127 (recreation) is intended to improve recreational characteristics of Commons Beach, to add landscaping and best management practices, and to provide ADA access and other amenities. Elements of the proposed project may also address, in part, EIP project 89 (Road Unit 15 scenic improvements in Tahoe City). (TCPUD, Tahoe City)

North Tahoe High School Gymnasium Addition

The proposed project involves the construction of a gymnasium addition to the existing joint middle-high school facility on the 47.9 acre school property. The gymnasium will provide approximately 18,000 square feet of space for court activities, athletic classrooms, storage, restrooms, and mechanical systems. The new gymnasium will be located behind the existing gymnasium between the school

building and the athletic fields. The new gymnasium will be used by the high school students, and allow the existing gymnasium to be used by the middle school students. (Tahoe Truckee Unified School District, Polaris Road, Tahoe City)

Tahoe Vista Recreation Area

The project proposes to reconstruct parking for boat and trailers, create traffic circulation throughout the site for all vehicles, and provide a parking area for beach users only. The boat launch ramp is proposed to be upgraded to meet California Department of Boating and Waterways standards. The boat ramp project has already been approved by TRPA. Thirteen auto/boat trailer spaces are proposed for the boat ramp area. Twenty (2 handicap) auto spaces and 8 auto/boat trailer spaces are proposed on the parcel north of Highway 28. (National Avenue/SR 28, NTPUD)

Tahoe Vista Chalets

The project applicants are proposing to subdivide two parcels into a Planned Unit Development (PUD) in order to allow for individual ownership of the residences. The proposed project will need a Placer County approved Conditional Use Permit / Planned Unit Development for the 6 proposed building lots and common area and a General Plan Amendment to exceed the current density limitation for this area.

Tahoe City Marina Master Plan

The Placer County Planning Department proposes the expansion of the existing marina to add up to 84 boat slips as part of Phase I. The project includes construction of a Tahoe City PUD pump station to be made a part of the "Harbor Master Building" and a parking structure.

Brook Avenue Parking Facility

The Placer County Public Works Department proposes to remove the existing foundation and construct a 20-space public parking facility on a vacant parcel in the community of Kings Beach.

Meadow Reclamation

Remove encroaching lodgepole pines from Antone Meadow in Burton Creek S.P., Solari Meadow in Plumas Eureka S.P. and all meadows in Washoe Meadows S.P. Lodgepole pines have started growing in the meadows due to lack of natural fire and

changes in the hydrologic regimes. The purpose of the project is to maintain healthy meadow ecosystems and riparian zones, and reduce fire danger. Cuttings will be stacked and burned over a five year period. Proposed pile locations will be reviewed by an archeologist. (Parks and Recreation Department)

Custom House Retail/Commercial Office Building

The project consists of the replacement of a previously existing service station with a retail commercial/office building. (Tahoe City, Jack Pine Street)

Lake Forest Affordable Housing Project

The Placer County Redevelopment Agency seeks authorization to purchase property for an affordable housing project.

Old County Road Regrading

The Placer County Public Works Department proposes to conduct annual maintenance of the road bed by regrading and adding base rock. Wider sections of the road would be hydroseeded where vegetation is desired to reduce the width to one way traffic. The regrading will maintain emergency vehicle access. (Old County Road, Department of Parks and Recreation)

Shoreline Protective Structure

The project consists of the removal of eroded bluff material and debris, and repair of a sloping rock revetment. (Fish and Game, 4796 North Lake Boulevard)

Tahoe City Marina Expansion Master Plan

The Tahoe City Marina Expansion Master Plan proposes plans for the future expansion of the marina into four areas of improvements: 1) marina expansion; 2) parking facilities; 3) public access; and 4) Best Management Practices (BMPs). The Master Plan is envisioned to include two phases of development. (Placer County)

Shoreline Stabilization Construction

The project includes the installation of a sheetpile wall, fill behind the wall, and the placement of rock slope protection on water side of wall to reclaim and protect the eroded shoreline. (Fish and Game, 2200 North Lake Boulevard)

National Avenue Water Treatment Plant Improvement Project

The project consists of the construction of 800 linear feet of 60in chlorine contact pipeline, approximately 350 linear feet of smaller diameter pipe, a small expansion to an existing pump station building to house new ultraviolet disinfection equipment, and construction of a vault to house particulate filtration equipment. (NTPUD)

Tonapalo Tahoe Vista Resort

The project consists of the redevelopment of beachfront property by removing existing 34 motel units and constructing 22 new timeshare units. (North Lake Boulevard)

Replace Signals

The project proposes to replace the existing signals at the intersection of SR 28 and SR 267. New poles will be installed within the existing right-of-way at a distance not exceeding 5 feet from the existing location. It is proposed to install new foundations, conduit and pull boxes, vehicle detector loops and two AC pads for pedestrian refuge at the southeast and southwest corners near the signal poles. No new right-of-way will be acquired. The project will offer relief to pedestrians and improved lighting location will benefit the motoring public. (Caltrans/Placer County/TRPA, in Kings Beach)

Serenade PUD

The project proposes to redevelop the Tahoe Vistana Motel into a 16-lot Single Family Residential Planned Unit Development. The proposal includes demolishing seven of the eight existing structures along with two pool areas. (Anderson Road and Estates Drive, Tahoe Vista)

Granite Drive Road and Trail Restoration

The project consists of revegetating disturbed and compacted soils and installing vehicle barriers to prevent further resource damage and to help restore the property to a more natural condition. (CTC and Granite Rd.)

Kings Beach Area Restoration Projects

The project consists of revegetating disturbed and compacted soils and installing vehicle barriers to prevent further resource damage and to help restore the property to a more natural condition. (CTC)

Beaver Street Erosion Control Project

The project area is a steeply sloped hillside subdivided into small residential lots. Runoff from roadways and private property is directed straight down slope resulting in erosive flow velocities on the unprotected soils. The project will install roadway shoulder improvements, storm water conveyance and infiltration systems, revegetation, and other water quality improvements. (CTC, Kings Beach)

Tahoe City PUD Lakefront Sewer Main Repair

TCPUD is repairing a section of sewer main that was temporarily repaired after it was damaged in November 2000. The permanent pipeline repair will occur in the shoreline of Lake Tahoe. (TCPUD, Dollar Point)

Recreation and Maintenance Building

The NTPUD proposes to construct a 6,714sqft prefabricated metal storage building, 12 storage bays with roll-up doors, one parts storage bay, and one office room. The building will have a concrete foundation/floor with a low pitch shed roof. (NTPUD, National Avenue, Donner Road, Tahoe Vista)

Red Wolf Lodge, Phase V

The Kings Beach Community Plan is proposed to be changed in Special Area 4 to allow 18 units per acre. At this time the maximum allowable units per acre is 15.

Timber Stand Improvement

The Department of Parks an Recreation proposes to remove marked trees in 57 acres in the Burton Creek State Park to prevent bark beetle infestations, reduce fire risk, prepare for prescribed burning, and improve the composition, structure and function of the native forest.

4.2.3 Summary of TRPA EIP Projects

TRPAs Environmental Improvement Program (EIP) is a strategy to achieve the environmental goals for the Lake Tahoe Basin. The EIP strategy builds on the regulatory and capital improvement approaches that have been underway within the Region for more than ten years. This strategy is designed to accomplish, maintain or exceed multiple environmental goals and develop a more integrated, proactive approach to environmental management. Key to this strategy is reliance upon

partnerships with all sectors of the community, including the private sector, local, state and federal government.

The EIP provides a regional framework for implementing restoration programs and projects. Eligibility requirements for inclusion into the EIP are found in Chapter 31 of TRPAs Code of Ordinances. In general, the project must directly relate to the respective threshold program and contribute to the attainment of that threshold. Prioritizing EIP needs is a difficult and sometimes controversial exercise because of the unknown variables that hinder the applicability of a thorough prioritization rationale. Regardless of the current prioritization scheme applied in the list, it is important to realize that these constitute "planned" priorities. Once a project or effort is underway, many other variables will affect its priority status including the political process, funding availability, feasibility of construction or permitting, etc. The development of improved prioritization schemes and tools continues as part of the EIP implementation process.

The environmental thresholds are defined as environmental standards necessary to protect the natural environment and to maintain public health and safety within the Region. The threshold categories are:

- Water Quality
- Soil Conservation
- Air Quality/Transportation
- Vegetation
- Fisheries
- Wildlife
- Scenic Resources/Community Design
- Recreation
- Noise

The following is a summary of EIP projects and programs identified from within the area evaluated for cumulative impacts for the proposed SR 28 water quality

improvement and roadway rehabilitation project. The proposed project includes EIP Projects 762 (Class II Bike Lane), 798 (Scenic Turnouts) and 998 (Water Quality improvements). Project specific details for each proposed EIP project are available in TRPAs most recent 5-year EIP Update (TRPA, 2001).

Table 4-1 Summary of EIP Projects, North Shore Area of Lake Tahoe, California

Threshold Program	Project Name	EIP Project #
AIR QUALITY/TRANS	CLASS 2: SR 28 TO SR 267 SUMMIT	748
AIR QUALITY/TRANS	CLASS ONE: DOLLAR HILL TO NORTH TAHOE REGIONAL PARK	761
AIR QUALITY/TRANS	CLASS ONE: LAKE FOREST TRAIL	10041
AIR QUALITY/TRANS	CLASS ONE: NORTHWOOD BLVD. VILLAGE BLVD. EAST TO S.R. HIGHWAY 28	758
AIR QUALITY/TRANS	CLASS TWO: S.R. HIGHWAY 28 DOLLAR HILL TO NORTH STATELINE	762
AIR QUALITY/TRANS	KINGS BEACH ROADWAY CURB/GUTTER SIDEWALK BICYCLE TRAIL AND WQ	787
AIR QUALITY/TRANS	NORTHSHORE TROLLEY SERVICE EXPANSION	830
AIR QUALITY/TRANS	PLACER COUNTY TRANSIT IMPROVEMENTS	816
FISHERIES	BURTON CREEK LINKED PROJECT-STREAM HABITAT RESTORATION	51
FISHERIES	CARNELIAN BAY SPAWNING- LAKE HABITAT RESTORATION	532
FISHERIES	CARNELIAN CREEK PHASE II - STREAM HABITAT. RESTORATION	411
FISHERIES	E. OF KINGS BEACH BOAT RAMP SPAWNING HABITAT RESTORATION	530
FISHERIES	GRIFF CREEK - STREAM HABITAT RESTORATION	410
FISHERIES	GRIFF CREEK	658
FISHERIES	HABITAT RESTORATION-DOLLAR CREEK IMPROVEMENTS	898
FISHERIES	LAKE FOREST SPAWNING -LAKE HABITAT RESTORATION	531
FISHERIES	LAKE HABITAT RESTORATION-PLACER COUNTY	974
FISHERIES	WATSON CREEK POOL HABITAT DEVELOPMENT - STREAM HABITAT RESTORATION	405
RECREATION	BROCKWAY SUMMIT OHV STAGING AND PICNIC AREA	10096
RECREATION	BURTON CREEK STATE PARK IMPROVEMENTS	613
RECREATION	BURTON CREEK STATE PARK/TAHOE SRA MASTER PLAN	860
RECREATION	COMMONS BEACH IMPROVEMENTS	10127
RECREATION	CTC TAHOE VISTA BEACH IMPROVEMENTS	624
RECREATION	KINGS BEACH STATE RECREATION AREA PUBLIC PIER	619
RECREATION	MARINA MASTER PLAN-TAHOE CITY YACHT CLUB MARINA	982
RECREATION	NORTH TAHOE BEACH CENTER IMPROVEMENTS	10093

Threshold Program	Project Name	EIP Project #
RECREATION	NORTH TAHOE LAKE ACCESS IMPROVEMENTS	618
RECREATION	NTPUD REGIONAL PARK CROSS COUNTRY SKI TRAILS	389
RECREATION	TCPUD LAKE FOREST BOAT RAMP EXPANSION	287
RECREATION	USFS TAHOE RIM TRAIL ADDITIONAL SEGMENTS	293
SCENIC RESOURCES	CARNELIAN BAY SR 28 UTILITY UNDERGROUNDING	420
SCENIC RESOURCES	ROADWAY UNIT # 19; FLICK POINT ROADSIDE IMPROVEMENT	10002
SCENIC RESOURCES	ROADWAY UNIT # 20 D; TAHOE VISTA, NORTH CASINO CORE: CAL NEVA TOWER	10004
SCENIC RESOURCES	SCENIC ROAD UNIT #15 TAHOE CITY IMPROVEMENT	89
SCENIC RESOURCES	SCENIC ROAD UNIT #16 LAKE FOREST IMPROVEMENT	90
SCENIC RESOURCES	SCENIC ROAD UNIT #18 CARNELIAN BAY IMPROVEMENT	91
SCENIC RESOURCES	SCENIC ROAD UNIT #19 FLICK POINT IMPROVEMENT	92
SCENIC RESOURCES	SCENIC ROAD UNIT #20 TAHOE VISTA IMPROVEMENT	93
SCENIC RESOURCES	SCENIC SHORE UNIT #15 TAHOE CITY IMPROVEMENT	106
SCENIC RESOURCES	SCENIC SHORE UNIT #16 LAKE FOREST IMPROVEMENT	107
SCENIC RESOURCES	SCENIC SHORE UNIT #18 CEDAR FLAT IMPROVEMENT	504
SCENIC RESOURCES	SCENIC SHORE UNIT #19 CARNELIAN BAY IMPROVEMENT	108
SCENIC RESOURCES	TAHOE CITY ELECTRICAL SUB-STATION RELOCATION	135
SCENIC RESOURCES	TAHOE VISTA HWY 28 UTILITY UNDERGROUNDING	149
SOIL CONSERVATION/SEZ	BURTON CREEK CORRAL REMOVAL AND SEZ RESTORATION	935
SOIL CONSERVATION/SEZ	BURTON CREEK LINKED PROJECT/ANTONE MEADOW TO LAKE	988
SOIL CONSERVATION/SEZ	BURTON CREEK ST PARK DAM REMOVAL & ROAD OBLITERATE	945
SOIL CONSERVATION/SEZ	CALIFORNIA STATE PARKS	351
SOIL CONSERVATION/SEZ	PLACER COUNTY YARD SEZ RESTORATION PROJECT	940
SOIL CONSERVATION/SEZ	RESTORE 40 ACRES OF SEZ - PLACER COUNTY	649
SOIL CONSERVATION/SEZ	SIERRA PACIFIC INDUSTRIAL YARD SEZ RESTORATION	257
SOIL CONSERVATION/SEZ	SNOW CREEK SEZ RESTORATION	25
VEGETATION	AGATE HAZARD REDUCTION	918
VEGETATION	DOLLAR POINT HAZARD REDUCTION	915
VEGETATION	MT WATSON CRMP	32
WATER QUALITY	DOLLAR POINT II ECP	10063
WATER QUALITY	FLICK POINT PHASE I: NILE ROAD ECP PORTION	719
WATER QUALITY	KINGS BEACH COMMERCIAL CORE	10060
WATER QUALITY	KINGS BEACH INDUSTRIAL	733
WATER QUALITY	KINGS BEACH RESIDENTIAL AREA TREATMENT -	15

Threshold Program	Project Name	EIP Project #
	PHASE II	
WATER QUALITY	LAKE FOREST ECP	10061
WATER QUALITY	SR 267 AT INTERSECTION OF SR 28	997
WATER QUALITY	SR 28 TAHOE CITY TO SR 267 INTERSECTION	998
WATER QUALITY	TAHOE ESTATES INCLUDING NATIONAL AVENUE	212
WATER QUALITY	TAHOE VISTA - TAMARACK	716
WILDLIFE	LAKE FOREST MEADOW HABITAT RESTORATION	10144
WILDLIFE	WILDLIFE HABITAT RESTORATION @ TAHOE BASIN S.P. PHASE I	10083

4.2.4 Summary of Placer County Projects

The Placer County Planning and Public Works Departments were consulted regarding known projects within the project area. Actions undertaken by Placer County within the Lake Tahoe basin are subject to TRPA review and permitting, and must conform to TRPA environmental thresholds for approval. The following is a summary of proposed Placer County projects within the Lake Tahoe north shore area:

Table 4-2 Summary of Proposed Placer County Projects

Project Name	Project Description	Status
BROCKWAY WATER QUALITY	Storm water improvements down gradient of SR 28	In planning stages
CEDAR GLEN CONVERSION FROM MOTEL TO TIMESHARE	Proposal to convert the existing 31 unit motel to timeshare and remodel the rear two story units in Tahoe Vista	
CEDAR GROVE APARTMENTS/MOURELATOS PARTNERSHIP AFFORDABLE HOUSING PROJECT	Proposal to develop a 12.5 acre parcel into a 110 unit affordable housing complex. Proposal includes a Community Plan Amendment in order to annex the 12.5 acre parcel into the Tahoe Vista Community Plan area.	Tahoe Regional Planning Agency is the lead agency.
HIGHLANDS VILLAGE MIXED-USE PROJECT	Proposed mix of affordable senior housing (78 unit-three-story building, underground parking garage), commercial building (4,791 sq. ft), and 25-three story townhouse buildings (50 units), Tahoe City area	Information currently being supplied to the County for approval.
KINGS BEACH COMMERCIAL CORE IMPROVEMENT PROJECT	Proposed "main street" beautification project includes modification of the roadway, pedestrian access improvements, water quality improvements, and replacement parking.	Administrative Draft EIR being prepared by project consultant, will be complete in fall of 2005.
LAKE FOREST WATER QUALITY	Storm water improvements down gradient of SR 28	In planning and design stages
LAKEPOINT PLANNED DEVELOPMENT	Proposal to subdivide the existing four residential structures, with the remaining property staying in a common area.	Negative Declaration review period ended July 11, 2003. Planning Commission hearing pending.
SANDY BEACH INTERNAL OWNERSHIP AND AFFORDABLE HOUSING	Proposal includes the existing restaurant to remain with a small addition proposed and parking improvements. Existing campground and bike rental shop will be eliminated. Proposed in the existing	Information currently being supplied to the County for approval.

Project Name	Project Description	Status
	campground area are 45 fractional share units and 10 low-income housing units, with pool and clubhouse.	
TAHOE CITY MARINA EXPANSION MASTER PLAN	Proposed expansion and improvements to take place in two phases that includes marina expansion, parking facilities, and public access	CEQA Notice of Determination filed 3/30/05..
TAHOE CITY PUBLIC PARKING STRUCTURE	Proposal to construct a three-level, approximately 136-space public parking structure with a footprint covering approximately 18, 500 sq. ft.	Project to be incorporated into the Tahoe City Marina Expansion Master Plan EIR/EIS.
TAHOE ESTATES WATER QUALITY	Storm water improvements in subdivisions upgradient of SR 28	Currently in the process of funding acquisition.
TAHOE SANDS RESORT REDEVELOPMENT	Proposed redevelopment of existing resort increasing the number of units to 86 contained in five separate buildings in a phased development.	
TAHOE VISTA CHALETS	Subdivision of 6 existing residences on 2 parcels	Mitigated Negative Declaration prepared on 3/17/05.
WALSH PROPERTIES RETAIL BUILDING	Proposed construction of a new retail building in the "Tahoe Style" with a 51 stall paved parking area to be utilized for retail sales of boats	Information currently being supplied to the County for approval.

Additionally, Placer County Community Plans were reviewed for the Lake Tahoe north shore area (communities of Tahoe City, Carnelian Bay, Tahoe Vista, Kings Beach and North Stateline). The community plans are consistent with the TRPA goals and policies yet with greater specificity particular to the communities in question. Although they do not include details on specific proposed projects, the community plans set forth objectives and policies, and identify recommended improvements and facilities recommended to implement TRPAs regional plans.

4.2.5 Summary of Tahoe City Public Utility District Projects

The Tahoe City Public Utility District (TCPUD) was consulted regarding known projects within the project area. Actions undertaken by the TCPUD within the Lake Tahoe basin are subject to TRPA review and permitting, and must conform to TRPA environmental thresholds for approval. The following is a summary of proposed TCPUD projects within the Lake Tahoe north shore area:

Table 4-3 Summary of Proposed TCPUD Projects

PROJECT NAME	PROJECT DESCRIPTION	STATUS
GROVE STREET PUMP STATION	Relocate pump station within Tahoe Marina	In final design stage.
LAKESIDE TRAIL 1A & 2B	Construct lakeside trail	Unknown
LAKESIDE TRAIL 2A	Construct lakeside trail	Project is complete.
LAKESIDE TRAIL 2C COMMONS BEACH	Construct lakeside trail	Unknown
LAKESIDE TRAIL 3 COMMONS BEACH	Construct lakeside trail	Project is complete.
COMMONS BEACH LAKE ACCESS ENHANCEMENT	Construct lake access route	Project is complete.
COMMUNITY CENTER IMPROVEMENTS	Structural improvements	Project is complete.
TAHOE TAVERN HEIGHTS – WOODVIEW TO FOUR SEASONS TANK	Unknown	Unknown
TAHOE CITY SIDEWALKS	Sidewalk improvements	Unknown

4.2.6 Summary of North Tahoe Public Utility District Projects

The North Tahoe Utility District (NTPUD) was consulted regarding known projects within the project area. Actions undertaken by the NTPUD within the Lake Tahoe basin are subject to TRPA review and permitting, and must conform to TRPA environmental thresholds for approval. The following is a summary of proposed NTPUD projects within the Lake Tahoe north shore area:

Table 4-4 Summary of Proposed NTPUD Projects

PROJECT NAME	PROJECT DESCRIPTION	STATUS
National Ave. to Agatam Beach	Boat Ramps	Construct in 2005
Class I Dollar Hill to North Tahoe Regional Park	Class I Bike Trail	Construct in 2005

4.3 Assessment of Cumulative Impacts

A variety of quantitative and qualitative methods such as Arc View GIS files, Regional, Community and County General Plans, review of planning websites and documents and project environmental documents were used in this analysis. Quantifiable impacts were generally not yet available for the majority of the proposed projects located in the north Lake Tahoe area, as they have not yet been constructed (many TRPA EIP project descriptions provided estimates of beneficial impacts).

Because of this limitation, the following analysis relies on *qualitative* assessment of impacts in the North Lake Tahoe area.

Potential impacts resulting from the project will primarily be limited to the construction phase of the project. Dust controls, noise controls, best management practices to control erosion and water resources, avoidance of special status species and their habitats, and public notifications of traffic interruptions will all occur during construction.

Projects occurring simultaneously with the Placer 28 EIP Project may add to the temporary impact. Therefore, coordination with agencies with jurisdiction over other projects in the project limits is needed. Tahoe Basin meetings have already begun with a number of agencies to ensure that these cumulative construction related impacts are accounted for and minimized. Caltrans requires a Traffic Management Plan (TMP) for all construction activities on the State Highway System. Where several consecutive or linking projects or activities within a region or corridor create a cumulative need for a TMP, Caltrans coordinates individual TMPs or develops a single interregional TMP. A TMP, when implemented, results in minimized project related traffic delay and accidents by the effective combination of public and motorist information, demand management, incident management, system management, alternate route strategies, construction strategies, and other strategies. Furthermore, TMPs are designed to reduce the amount of significant delay time due to lane closures and construction related activity. Significant delay time is 30 minutes above normal recurring traffic delay on the existing facility or the delay threshold set by the district traffic manager, whichever is less. The Caltrans traffic management unit has indicated that SR corridors on the North Shore of Lake Tahoe might require a cumulative delay time of less that 30 minutes per TMP guidelines.

Some project features will contribute longer lasting effects. These features include a wider highway in required locations, new drainage and water treatment facilities and removed vegetation. The project is not anticipated to adversely impact any view sheds in the area, as new features added by the project are anticipated to blend in with the existing environment. Furthermore, vegetation removed by the project will be revegetated within 2-5 years. Some cumulative impact may occur, if other projects also remove vegetation prior to the reestablishment of vegetation by this project. However, this impact is speculative and is not likely to be substantial given the projects listed above.

Thus, the cumulative impact of the EIP is anticipated to provide benefits to the Tahoe Basin once completed. As shown on Table 4-1, eight of the nine TRPA resource areas have EIP projects identified for them in the North Shore Area.

Chapter 5 Mandatory Findings of Significance

The California Environmental Quality Act lists a number of "Mandatory Findings of Significance." The project does not have the potential to impact any resources to the extent that a mandatory finding of significance would occur. Mandatory findings include the degradation of the quality of the environment, substantial reductions to the habitat of a fish or wildlife species, causing a fish or wildlife population to drop below self-sustaining levels, threatening to eliminate a plant or animal community, reducing the number or restricting the range of a rare or endangered plant or animal or eliminating important examples of the major periods of California history or prehistory. Any impacts to these resources have been identified in Chapters 3.2 Cultural Resources and 3.11 Biological Resources.

Furthermore, the impacts will not be cumulatively considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. A discussion of cumulative impacts is included in Chapter 4.

Finally, the project does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. Impacts on the community were discussed in Chapter 3.1 Community Environmental Consequences Population and Housing. All project impacts including but not limited to those related to hazardous waste, noise, visual resources, transportation and air quality will be less than significant to people in the area.

Chapter 6 Mitigation, Avoidance and Minimization Measure Monitoring

Caltrans Environmental Office will provide all mitigation, avoidance and minimization measures (measures) to the Caltrans Office of Design. The design engineer will be responsible for ensuring that all mitigation, measures included in this document are incorporated into the project. The design engineer will forward all measures to the Construction Resident Engineer. The Resident Engineer will be responsible for ensuring that all design features and measures will be implemented throughout construction. The resident engineer will also be responsible for ensuring that the contractor removes all construction related materials from streams at the end of the project.

Table 6-1 Summary of Mitigation, Avoidance and Minimization Commitments provides parties responsible and completion dates for all mitigation measures on the project.

Table 6-1 Summary of Mitigation, Avoidance and Minimization Commitments

Measure	Responsible for Implementation	*Notes*	*Completion Date*
AQ1: Construction measures may include but not be limited to watering of disturbed areas and prompt covering and removal of dirt	Contractor and Caltrans Resident Engineer	Provisions will be included in the project plans and specifications specifying the options available and need to control dust during construction. The Contractor and Resident Engineer will be responsible for implementation.	Control of dust will be required throughout construction.
AV1: Establish ESAs	Contractor and Caltrans Resident Engineer	ESAs and onsite BMPs implemented as a first order of work. No work or operation of equipment will occur within ESA areas in all construction seasons	ESAs remain in field until all project construction activities are complete
C1: Bilingual public participation campaign	Caltrans Project Manager	Resident Engineer will be responsible for informing the public during the construction period	Public Participation will be required throughout construction
HZ1: Reduce potential exposure to petroleum hydrocarbons	Contractor and Caltrans Resident Engineer, Design Engineer	Special Provision must be included in the contract and contractor is responsible for implementing	Contractor must complete Health and Safety Plans prior to construction; implementation of plans throughout construction
HZ2: Minimize exposure to chromium and lead from traffic striping	Contractor and Caltrans Resident Engineer, Design Engineer	Special Provision must be included in the contract and contractor is responsible for implementing	Contractor must complete Health and Safety Plans prior to construction; implementation of plans throughout construction
N1: Restrict construction activities with high noise levels to the	Contractor and Caltrans Resident Engineer, Design Engineer	Special Provision must be included in the contract and contractor is responsible for implementing	Noise limitations would continue throughout construction unless exception is granted by TRPA

Measure	Responsible for Implementation	*Notes*	*Completion Date*
daytime			
V1: Minimize the impact on existing views	Caltrans Design Engineer and Landscape Architect	The final design of the project will have details on where changes will be made. Consultation with TRPA Staff is expected.	Design changes will be included prior to completion of final project plans and well before construction.
V2: Reduce, minimize and compensate for impacts to vegetation	Caltrans Biologist and Landscape Architect	Caltrans Landscape Architects and Biologists will complete detailed replanting plans as part of the project design. For more details see Appendix G.	Replanting will be carried out either by the Conservation Corps or a Contractor under direction of Caltrans Landscape Architects. Replanting should be complete 2-5 years from the end of construction.
V3: Reduce impacts to the existing terrain	Caltrans Design Engineer and Landscape Architect	The final design of the project will have details on where terrain modifications will be needed..	Design changes will be included prior to completion of final project plans and well before construction.
V4: Reduce the impact of manmade structures	Caltrans Design Engineer and Landscape Architect	Treatments will be added to the design of the project.	Design changes will be included prior to completion of final project plans and well before construction.
WQ1: Restrict timing of in-stream activities	Contractor and Caltrans Resident Engineer	Construction activities will be permitted below the OHWM of drainages only between July 15th and October 15th, (subject to stream conditions and permit restrictions) in all construction seasons.	October 15th of final construction season
WQ2: Minimize disturbance to creek channel and adjacent areas	Contractor and Caltrans Resident Engineer	Minimize disturbance to drainages in all construction seasons	Streambanks stabilized by October 15th of each construction season
WQ3: Containment Measures / Construction site BMPs	Contractor and Caltrans Resident Engineer	Methods shall be TRPA and RWQCB approved	Containment measures in place until all construction activities are complete
WQ4: De-watering Activities	Contractor and Caltrans Resident Engineer	Methods shall be TRPA, RWQCB, and ACOE approved. Require temporary downstream settling basin	Temporary de-watering structures removed by October 15th of each construction season
WQ6: Water Quality or Excess Coverage Mitigation Fees	Caltrans Project Management	Fees to be determined by CTC during TRPA permitting	Mitigation fees paid prior to issuance of TRPA permit
WQ7: Restore disturbed SEZs at a 1.5 to 1 ratio	Caltrans Project Management	Fees to be determined by CTC during TRPA permitting	Fees paid prior to issuance of TRPA permit (see WQ6)
WL1: Ensure fish Passage	Contractor and Caltrans Resident Engineer	Drainages free of debris and obstruction except during temporary de-watering activities	October 15th of final construction season
WL2: Pre-construction amphibian surveys	Caltrans Biologist	May require temporary work stoppage	Prior to July 15th (see WQ1) of each construction season
WL3: Restrict timing of woody vegetation removal	Contractor and Caltrans Resident Engineer	Remove woody vegetation between August 16th and October 15th	October 15th of first construction season
WL4: Pre-construction surveys: Nesting Birds	Caltrans Biologist	Required 30 days prior to vegetation removal if WL3 is not feasible. Requires consult with USFWS if nesting birds discovered	Prior to May 1st of each construction season requiring woody vegetation removal
WL5: Limit vegetation removal	Contractor and Caltrans Resident Engineer	Limit vegetation removal in all construction seasons	October 15th of final construction season
WC1: Weed Free Construction Equipment	Contractor and Caltrans Resident Engineer	Construction equipment cleaned of potential noxious weed before entry the project area.	Construction equipment free of weed source until all construction activities are complete

Measure	Responsible for Implementation	*Notes*	*Completion Date*
WC2: Equipment Staging in Weed Free Areas	Contractor and Caltrans Resident Engineer	Staging areas to be delineated on project plans	Construction equipment staged in weed free areas until all construction activities are complete
WC3: Weed Free Erosion Control	Contractor and Caltrans Resident Engineer (implement in field) Caltrans Landscape Engineer or Biologist (Post construction monitoring)	As per Caltrans Landscape Architecture Revegetation and Erosion Control Plan for methods and monitoring	October 15th of first construction season

Details of the revegetation work on the project are included in Appendix G.

Chapter 7 Section 4(f) Analysis

7.1 Proposed Action

The proposed action is described in Chapter 1 Proposed Project. In general, the proposed project will collect and treat the roadway storm water runoff from State Route 28 (SR 28), add bicycle lanes, and construct operational improvements from Tahoe City to the Nevada State line, except for the community of Kings Beach.

7.2 Section 4(f) Properties

A number of public properties exist between Tahoe City and the Nevada Stateline on State Route 28. A listing of recreational properties is included in Section 3.6 Recreation. Of the properties listed impacts are only anticipated at the California Tahoe Conservancy (CTC) beach access, Moon Dunes Beach, Tahoe State Recreation Area, and the Tahoe City Public Utility District (TCPUD) bike trail. In addition, the North Tahoe Public Utility District (NTPUD) owns a parcel known as the "Firestone property," which is proposed for a basin site. The basin on the Firestone property will not impact any Section 4(f) uses. Documentation from the NTPUD, agreeing that recreational uses will be unaffected, is included in Appendix D. Appendix D also includes a letter from the TCPUD. The impact to the TCPUD bike trail was determined to be only temporary.

Further discussions of the permanent impacts to the Tahoe State Recreation Area, Placer County's Moon Dunes Beach and CTC beach access are provided below. Permanent maintenance easements at each of these sites will constitute a "use" pursuant to Section 4(f).

7.2.1 Tahoe State Recreation Area

The Tahoe State Recreation Area (SRA)[3], operated by the State Parks Service is included on Sheet 1 of the project mapping in Appendix B. The Tahoe SRA includes parcels 094-130-006, 094-150-016 and 094-150-015. The size of parcel 094-130-006 is approximately 23,715 m^2 (5.86 acres), parcel 094-150-016 is 7,284 m^2 (1.8 acres) and parcel 094-150-015 is 4,452 m^2 (1.1 acres).

[3] A State Recreation Area is defined at California Public Resources Code Section 5019.56(a) as "consisting of areas selected and developed to provide multiple recreational opportunities to meet other than purely local needs. The areas shall be selected for their having terrain capable of withstanding

Activities at the SRA include swimming and fishing in Lake Tahoe. Picnic areas and two campgrounds, Lakeside and Hillside, are also available for use. Figure 7-1 Tahoe State Recreation Area identifies the location of campsites, the lake and picnic areas within the Lakeside campground and provides a location of the Hillside campground.

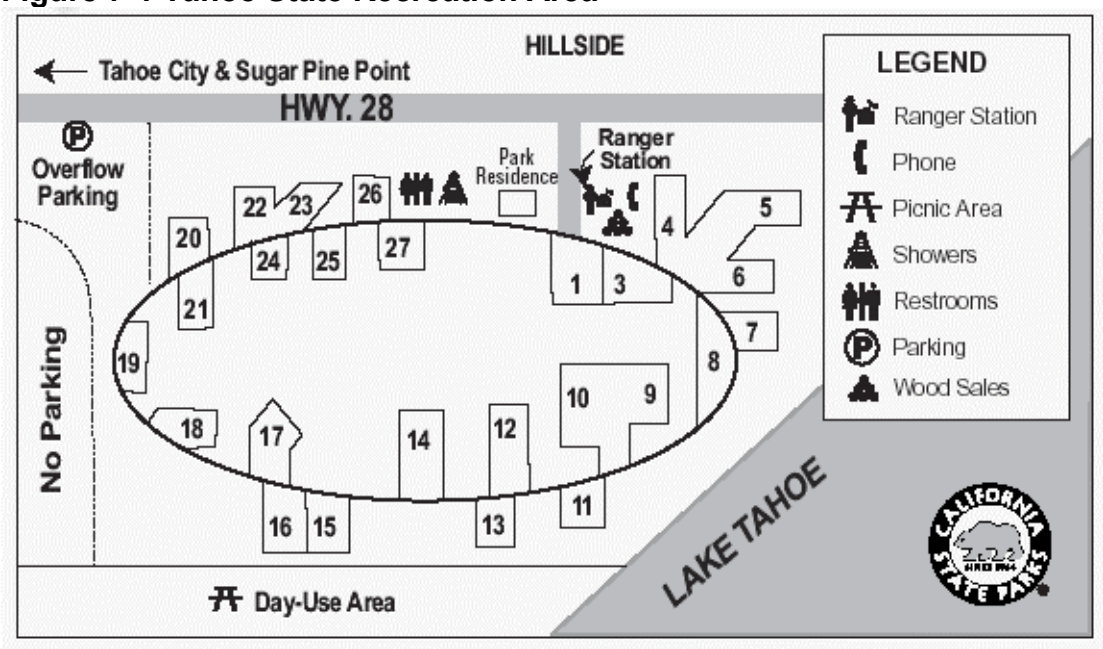
Parcel 094-130-006, Lakeside Campground, is accessible to pedestrians, cyclists and motorists. Pedestrians and cyclists may use the Tahoe City bike trail that runs from Tahoe City up to Dollar Hill at KP 4.75 (PM 2.95). Parking is available for campers at each campsite within the campground. Overflow parking is also available for campers and day users at the northwest corner of the property. A Safeway shopping center is also located just west of the campground. Some day users may originate from this center.

Parcels 094-150-016 and 094-150-015, to the east of the campground, are primarily used to access Lake Tahoe. The southern extent of these parcels is the lake, which is used for swimming and fishing. A pier is located at the southwest corner of parcel 094-150-015. Other than the lake, the remainder of the parcels are not used for recreational activities. Access to the properties for pedestrians and cyclists is available from the Tahoe City bike trail. Motorists can access the parcels by way of Sierra Terrace Road and a direct left onto an unnamed road that is located along the northern extent of the parcels. Parking along this road is available.

The number of users varies greatly on the season. The peak season is the summer months of July and August. In addition, the number of campers is limited to the number of available campsites. During Independence Day the parcels are a gathering point for individuals interested in watching fireworks displayed over the lake.

extensive human impact and for their proximity to large population centers, major routes of travel, or proven recreational resources such as manmade or natural bodies of water."

Figure 7-1 Tahoe State Recreation Area



7.2.2 California Tahoe Conservancy Beach Access

The CTC beach access is included on Sheets 16 and17 of the project mapping in Appendix B. The CTC beach access is located on parcel 117-072-014. The size of the parcel is approximately 6,394 m^2 (1.58 acres).

The CTC property provides access to beach activities such as sunbathing and swimming in Lake Tahoe. In addition, picnic tables are available for use on the property.

The north/highway side of the property has limited or no recreational value. Several small trees populate this area, with trails cutting through providing access to the beach and picnic areas. A photo of the site is provided below as Figure 7-2 CTC Beach Access.

Figure 7-2 CTC Beach Access

Motorists currently access the property by parking along the shoulder of the highway. The parking is therefore limited to only enough space for a few vehicles. Cyclists and pedestrians may utilize the highway shoulder to access the property.

As with the SRA property, the number of users varies greatly on the season with the peak season being the summer months of July and August.

7.2.3 Moon Dunes Beach

Moon Dunes Beach is included on Sheet 18 of the project mapping in Appendix B. The beach is located between KP 14.2 and 14.3 (PM 8.8 and 8.9). The size of the parcel is approximately 23,067 m^2 (5.7 acres).

Moon Dunes Beach provides access to beach activities such as sunbathing and swimming in Lake Tahoe. In addition, picnic table and barbeque facilities are available for use on the property.

Housing borders the property on the north and west sides. Hotels/Motels are to the east of the property. The lake is on the south side. An access point is located on the northwest side of the property.

Those who use Moon Dunes Beach either come from the Hotels/Motels to the east of the property or park in the highway shoulder and walk in from the beach access at the northwest corner. Due to the limited parking availability some beachgoers may use the northwest corner as a drop-off location and park elsewhere.

As with the other properties, the number of users varies greatly on the season with the peak season being the summer months of July and August.

7.3 Section 4(f) Impacts: Use

7.3.1 Tahoe State Recreation Area

On parcel 094-130-006, Lakeside Campground, bio-swales (see Appendix E for bio-swale simulations) are proposed on the north side of the property. The bio-swales will impact approximately 818 m^2 (0.2 acres). This is 3 percent of the parcel, which is 23,715 m^2 (5.86 acres). In order to maintain the bio-swales a permanent easement is likely to be required. This permanent use of property will be considered a "use" pursuant to Section 4(f).

The bio-swale at the north end of the parcel will have no direct impact on camping, picnic or beach recreation activities. Temporary indirect impacts will occur. Parcel 094-130-006 will have reduced accessibility during construction. In addition, a visual impact may result as the vegetation within the bio-swale establishes itself.

No substantial impacts to Hillside Campground are anticipated.

Parcels 094-150-016 and 094-150-015 will have direct impacts due to the placement of a series of infiltration basins. Currently, it is proposed that three Basins be placed each at a different elevation. The basin closest to the highway will be at the highest elevation as the terrain slopes down from the highway to the lake. The mapping in Appendix B, Sheet 1 of 22, identifies an approximate area where the basins will be located. The basins are not anticipated to require this entire area, however our calculation of 2,023 m^2 (0.5 acre) of impact includes this entire area. The area of parcel 094-150-016 is 7,284 m^2 (1.8 acres) and parcel 094-150-015 is 4,452 m^2 (1.1 acres). The total combined area is 11,736 m^2 (2.9 acres). Impacts will affect 17 percent of the parcels.

The combined permanent impacts to all areas within the SRA will be no greater than 2,833 m^2 (0.7 acre). This is less than 10 percent of the entire SRA.

Temporary impacts may occur during construction. These include impacts related to noise, dust, traffic and vegetation removal.

7.3.2 California Tahoe Conservancy Beach Access

The bio-swale on the CTC property will be situated in the area closest to the road. Many small trees will require removal to provide the bio-swale. According to the CTC removal of some of these saplings is preferable because they are too closely bunched for them to grow. Also, there is a desire to open up the view of the lake. If a good number of the saplings were to grow, then views of the lake would be lost.

The bio-swale is anticipated to occupy 1,200 m^2 (0.3 acres) of the parcel. This is approximately 19 percent of the parcel, which is 6,394 m^2 (1.58 acres). In order to maintain the bio-swale a permanent easement is likely to be required. This permanent use of property will be considered a "use" pursuant to Section 4(f).

Temporary impacts may occur during construction. These include impacts related to noise, dust, traffic and vegetation removal.

7.3.3 Moon Dunes Beach

A bio-swale is proposed to be situated near the access point at the northern portion of the Moon Dunes Beach parcel. Some vegetation may require removal for installation of the bio-swale. Grading will be performed to allow vegetation to grow in the swale and to direct water. Due to grading the topography of the parcel will be altered including the elimination of sand dunes near the northwest access point. The bio-swale will not block access to the parcel and will not be placed in an area that is utilized for sunbathing, picnicking, barbequing or swimming.

The bio-swale is anticipated to occupy 186 m^2 (0.05 acre) of the parcel. This is less than 1 percent of the parcel, which is 23,067 m^2 (5.7 acres). In order to maintain the bio-swale a permanent easement is likely to be required. This permanent use of property will be considered a "use" pursuant to Section 4(f).

Temporary impacts may occur during construction. These include impacts related to noise, dust, traffic and vegetation removal.

7.4 Avoidance Alternatives

- As stated previously in Chapter 1 basins locations were selected based on the following criteria:

1. At or near discharge point of runoff from State right-of-way,
2. Downgradient from discharge point,
3. Flat or gently sloping topography,
4. Undeveloped,
5. Not in an obvious Stream Environment Zone (SEZ),
6. Not in a floodplain,
7. Accessible by construction and maintenance equipment,
8. Greater than 100 (30 meters) feet upgradient or 10 feet (3 meters) down gradient of structural foundations,
9. Not above a known underground hazardous waste plume.

Infiltration basin locations that do not meet the criteria under #8 above are proposed as bio-swales.

These criteria limited the areas where the water treatment goals of the project could be met. Specific limitations on the Section 4(f) properties are identified below. Alternative locations were explored for water quality improvements proposed on public lands. Eliminating the proposed basins/bio-swales on these parcels would significantly reduce the amount of treatment for the runoff that flows to that basin or bio-swale.

7.4.1 Tahoe State Recreation Area

Alternative locations were looked at for the basins proposed on Tahoe SRA parcels 094-150-016 and 094-150-015. Locations across the highway, to the north, are all upgradient from storm water runoff discharge points and would not offer water quality benefits.

Developing a basin to the west of the current proposed basin location would result in greater 4(f) impacts as the campground is located at this location. Furthermore, the campground is an existing use, so it does not meet criteria 4 above.

Developing a basin to the east of the current proposed basin location would not meet criteria 3 (flat or gently sloping), 4 (undeveloped) and 8 (distance from structures)

above. There are developed properties to the east with homes. In addition, a relatively large flat area needed for a basin is not available.

The proposed bio-swale on parcel 094-130-006 is intended to provide some treatment for runoff for the section of highway north of the campground and culverts located at PM 0.75 (KP 1.21) and PM 0.88 (KP 1.42). Treating the water within the campground would have greater Section 4(f) impacts and would disturb the existing use of the campground.

As stated above, eliminating the proposed basins/bio-swales on these parcels would significantly reduce the amount of storm water treatment in the area.

7.4.2 California Tahoe Conservancy Beach Access

Alternative locations were looked at for the bio-swale proposed on the CTC beach access parcel 117-072-014. Locations across the highway, to the north, are all upgradient from storm water runoff discharge points and would not offer water quality benefits.

Potential bio-swale sites to the east and west do not meet criteria 4 (undeveloped) and 8 (distance from structures) above.

As stated above, eliminating the proposed bio-swale on this parcel would significantly reduce the amount of storm water treatment at the location.

7.4.3 Moon Dunes Beach

Alternative locations were looked at for the bio-swale proposed at Moon Dunes Beach parcel 117-130-043. Locations across the highway, to the north, are all upgradient from storm water runoff discharge points and would not offer water quality benefits. Other parcels to the north are developed with housing.

Potential bio-swale sites to the east and west do not meet criteria 4 (undeveloped) and 8 (distance from structures) above. In fact the proposed bio-swale was originally planned as an outfall located between parcels 117-130-0037 and 117-130-038. The outfall was determined to be infeasible due to the amount of space available and accessibility to construction and maintenance equipment.

Eliminating the proposed bio-swale on this parcel would significantly reduce the amount of storm water treatment at the location.

7.5 Measures to Minimize Harm

7.5.1 Tahoe State Recreation Area

Measures to minimize harm within the SRA will be similar to the avoidance and minimization measures carried out throughout the project. Measures V2-Reduce, minimize and compensate for impacts to vegetation, V3-Reduce impacts to the existing terrain, and WL5-Limit vegetation removal will all be employed within the SRA. Basins will be designed to blend in with the existing terrain, while minimizing vegetation removal. Revegetation of disturbed areas will be accomplished after the completion of construction to reduce visual impacts at the site.

During construction measures AQ1-Construction measures may include but not be limited to watering of disturbed areas and prompt covering and removal of dirt, T1-Provide timely information on potential transportation delays and maintain traffic to greatest extent feasible during construction, and N1-Restrict construction activities with high noise levels to the daytime will be employed to reduce the impact on users of the SRA.

Caltrans will continue to work with State Parks representatives to provide advanced notice of construction related activities. Work within the SRA may be scheduled as to miss high volume periods for the site. Some night work may be necessary; however, night work will be limited in the evening to reduce the noise experienced by campers. Dust generation will be minimized by inclusion in the construction contract specifications to reduce this irritant.

More detailed construction plans will be provided to the State Parks Service to ensure their satisfaction with the project and its measures to minimize harm.

7.5.2 California Tahoe Conservancy Beach Access

The same avoidance and minimization measures employed at the Tahoe SRA will also be employed at the CTC beach access parcel. Measures V2-Reduce, minimize and compensate for impacts to vegetation, V3-Reduce impacts to the existing terrain, and WL5-Limit vegetation removal will be employed during the design and construction of the project. Furthermore, during construction measures AQ1-Construction measures may include, but not be limited to, watering of disturbed areas and prompt covering and removal of dirt, and T1-Provide timely information on potential transportation delays and maintain traffic to greatest extent feasible during construction. Construction is likely to occur during the day, which may still be a nuisance for users of the CTC Beach Access.

In addition, the proposed bio-swale will be constructed between the main trails.

More detailed construction plans will be provided to the CTC to ensure their satisfaction with the project and its measures to minimize harm.

7.5.3 Moon Dunes Beach

The same avoidance and minimization measures employed at the Tahoe SRA and CTC beach access parcel will also be employed at Moon Dunes Beach. Measures V2-Reduce, minimize and compensate for impacts to vegetation, V3-Reduce impacts to the existing terrain, and WL5-Limit vegetation removal will be employed during the design and construction of the project. Furthermore, during construction measures AQ1-Construction measures may include, but not be limited to, watering of disturbed areas and prompt covering and removal of dirt, and T1-Provide timely information on potential transportation delays and maintain traffic to greatest extent feasible during construction. Construction is likely to occur during the day, which may still be a nuisance for users of Moon Dunes Beach.

Access to Moon Dunes Beach will be as good or better than the existing situation that's because, if necessary, amenities such as a footbridge may be added to the site to aid access to the Beach. However, construction details are currently not available.

More detailed construction plans will be provided to Placer County to ensure their satisfaction with the project and its measures to minimize harm.

7.6 Coordination

7.6.1 Tahoe State Recreation Area

A combination of phone conversations, e-mails, letters, and field visits have been used to correspond with the California State Parks Sierra District.

A Senior Resource Ecologist from California State Parks joined Caltrans staff on two occasions, May 13 and October 16 of 2003, for field visits. During these visits, Caltrans' potential areas of impact were roughly defined.

During these field visits, and also via the other forms of correspondence identified above, Caltrans staff received information regarding the intended use of Tahoe SRA lands and their significance in terms of recreational value.

Parcel 094-130-006, Lakeside Campground, is intended for camping and also provides access to the lake. Activities at the lake include swimming and fishing. Picnic tables are also available. The area of this parcel that will be impacted by proposed bio-swales is of low recreational value according to State Parks because it abuts the highway. However, since this area is visible from the highway it is important to maintain its appearance.

The proposed basin locations on parcels 094-150-016 and 094-150-015 are also of low recreational value according to State Parks. However, in order to access recreational opportunities near the lake this area must be traversed by users. Therefore, it is important to keep the appearance of this area at a similar level of quality and character to that of the surrounding area.

A previous agreement, at the site, to allow geotechnical drilling was made between Caltrans and State Parks. Under this agreement State Parks had the following stipulations that may apply to the larger construction project as well:

1. No equipment will be left overnight or staged on state park property,
2. All spoils will be hauled off state park property,
3. The entire area impacted from the drilling will be rehabilitated to the satisfaction of California State Parks.

7.6.2 California Tahoe Conservancy Beach Access

A combination of phone conversations, e-mails and field visits have been used to correspond with a CTC Program Manager.

The CTC Program Manager joined Caltrans staff on an October 16, 2003, field visit. During this visit Caltrans identified potential areas of impact due to the bio-swale.

According to the Program Manager, the primary use of the parcel is for accessing the beach on Lake Tahoe's north shore. A picnic table also is available. The area where the bio-swale is proposed currently has little recreational value. However, the proposed area is flanked by trails leading to the beach access. In order to maximize the experience enjoyed by users of the site, the proposed bio-swale will need to maintain an appearance that blends in with the existing quality and character of the site.

7.6.3 Moon Dunes Beach

Work at Moon Dunes Beach has been recently proposed, so coordination efforts have just begun. A meeting with a Senior Supervisor from Placer County's Department of Facility Services was conducted January 22, 2004. E-mails and phone conversations have also been utilized to share information regarding the proposed improvements on Placer County property. Additional coordination with Placer County is planned to ensure that the project addresses the needs of Moon Dunes Beach.

Chapter 8 List of Preparers

The following Caltrans staff prepared this Initial Study/ Environmental Assessment/ Programmatic Environmental Assessment:

Agustinovich, Andrew, Transportation Planner, BA Sociology and Master's Degree Public Administration: Cal State University at Hayward. 13 years professional experience with the California Department of Transportation, 6 years professional experience in the fields of social and criminal research. Contribution: Socioeconomic analysis.

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Brown, Jody L., Associate Environmental Planner – Archaeology; BA University of California at Berkeley, MA Univ. of Michigan, 21 years experience in archaeology. Contribution: Historic Property Survey Report and Negative Archaeological Study Report.

Chadha, Rajive, Transportation Engineer. B.S. in Applied Science, University of Ottawa; 12 years of professional experience in transportation engineering and hazardous waste management. Contribution: Project Hazardous Waste Specialist, Initial Site Assessment and Preliminary Site Investigation preparation.

DeWall, Michael L., Transportation Engineer, P.E. (Civil); B.S. Civil Engineer, California State University, Chico (1982); M.S. Engineering Management, Air Force Institute of Technology (1988); twenty-two years of engineering experience in construction management, design, public works, and facility operations and maintenance; with Caltrans District 3 Hydraulics Branch for six years. Project involvement: preliminary drainage facilities and floodplain assessments.

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Management, from San Jose State University; 5 years experience in Environmental Planning. Contribution: IS/EA/EA writer/editor/ project coordinator.

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Rutsch, Tom, Associate Transportation Engineer. BS in Civil Engineering, California State University, Sacramento; 15 years professional experience in transportation engineering. Contribution: Project Engineer, Project Report writer/editor/ project coordinator.

Snow, Jerry L., Associate Environmental Planner. BS Environmental Science in Appropriate Technology, from Humboldt State University; 5 years experience in Environmental Planning. Contribution: IS/EA/PEA editor/ project coordinator.

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Wulf, Erick; Associate Environmental Planner, Archaeology. BA Anthropology, from California State University, Sacramento; MA Anthropology, from California State University, Sacramento; years experience in California Archaeology. Contribution: HPSR and ASR writer/lead archaeological surveyor/project archaeologist.

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Appendix A Environmental Checklist

The following checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. The CEQA impact levels include potentially significant impact, less than significant impact with mitigation, less than significant impact, and no impact. In many cases, background studies performed in connection with the project indicate no impacts. A "no impact" under CEQA reflects this determination. Any needed discussion is included in the section following the checklist. Please refer to the following for detailed discussions regarding impacts:

CEQA:

- Guidance: Title 14, Chapter 3, California Code of Regulations, Sections 15000 et seq. (http://www.ceres.ca.gov/topic/env_law/ceqa/guidelines/)
- Statutes: Division 13, California Public Resource Code, Sections 21000-21178.1 (http://www.ceres.ca.gov/topic/env_law/ceqa/stat/)

	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
AESTHETICS - Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☒	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
AGRICULTURE RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒
AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒

	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	X
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	X	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	X

BIOLOGICAL RESOURCES - Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	X	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	X	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	X	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	X	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	X	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	X

COMMUNITY RESOURCES - Would the project:

a) Cause disruption of orderly planned development?	☐	☐	☐	X

	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Be inconsistent with a Coastal Zone Management Plan?	☐	☐	☐	X
c) Affect life-styles, or neighborhood character or stability?	☐	☐	☐	X
d) Physically divide an established community?	☐	☐	☐	X
e) Affect minority, low-income, elderly, disabled, transit-dependent, or other specific interest group?	☐	☐	X	☐
f) Affect employment, industry, or commerce, or require the displacement of businesses or farms?	☐	☐	X	☐
g) Affect property values or the local tax base?	☐	☐	☐	X
h) Affect any community facilities (including medical, educational, scientific, or religious institutions, ceremonial sites or sacred shrines?	☐	☐	☐	X
i) Result in alterations to waterborne, rail, or air traffic?	☐	☐	☐	X
j) Support large commercial or residential development?	☐	☐	☐	X
k) Affect wild or scenic rivers or natural landmarks?	☐	☐	☐	X
l) Result in substantial impacts associated with construction activities (e.g., noise, dust, temporary drainage, traffic detours and temporary access, etc.)?	☐	☐	X	☐

CULTURAL RESOURCES - Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	X
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	X

GEOLOGY AND SOILS - Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	X	☐

	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	X	☐
ii) Strong seismic ground shaking?	☐	☐	X	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	X	☐
iv) Landslides?	☐	☐	X	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	X	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	X	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	X
HAZARDS AND HAZARDOUS MATERIALS - Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	X
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	X	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	X	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the	☐	☐	☐	X

	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
project result in a safety hazard for people residing or working in the project area?				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	X
HYDROLOGY AND WATER QUALITY - Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	X
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	X	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	X	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	X
f) Otherwise substantially degrade water quality?	☐	☐	☐	X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	X

	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	X
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	X
LAND USE AND PLANNING - Would the project:				
a) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	X
b) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	X
MINERAL RESOURCES - Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	X
NOISE - Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	X	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the	☐	☐	☐	X

	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
project expose people residing or working in the project area to excessive noise levels?				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	X
POPULATION AND HOUSING - Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
PUBLIC SERVICES -				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	X	☐
Police protection?	☐	☐	X	☐
Schools?	☐	☐	☐	X
Parks?	☐	☐	X	☐
Other public facilities?	☐	☐	☐	X
RECREATION -				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	X
b) Does the project include recreational facilities or require the construction or expansion of recreational	☐	☐	X	☐

	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
facilities which might have an adverse physical effect on the environment?				
TRANSPORTATION/TRAFFIC - Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☒	☐
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒
UTILITIES AND SERVICE SYSTEMS - Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has	☐	☐	☐	☒

	CEQA			
	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	X
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	X

MANDATORY FINDINGS OF SIGNIFICANCE -

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	X	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	X	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	X

Appendix B Project Mapping

The following are included in Appendix B:

- An overview map displaying the limits of the project.
- A planview of typical detention and infiltration basins.
- 22 map sheets displaying proposed improvements

Appendix C Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5267
FAX (916) 654-6608

July 26, 2000

TITLE VI
POLICY STATEMENT

The California State Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, sex and national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

Jeff Morales

JEFF MORALES
Director

Appendix D Section 4(f) Letters

NORTH TAHOE PUBLIC UTILITY DISTRICT

October 23, 2003

California Dept. of Transportation – MS15
ATTN: Jeremy Ketchum, Associate Environmental Planner
2389 Gateway Oaks Drive
Sacramento, CA 95833

Re: Firestone Property APN 093-010-039– Dollar Main Pump Station APN 092-120-037 – Section 4F

This letter is in response to the October 15th Caltrans request for concurrence regarding potential use of a Section 4(f) resource on two NTPUD parcels (093-010-039 and 092-120-037). Based on the location of infiltration basins to be constructed the NTPUD concurs that no impacts to resources protected by Sec. 771.135 Section 4(f) (49 U.S.C. 303) will occur.

Should you have any questions, please contact me at (530) 546-4212.

Sincerely,

Mike Geary, P.E.
Associate Civil Engineer

MG/mg

cc: Leon C. Schegg, Public Works Director

\\NTSERVER02\NEWMOM\Projects\CalTrans EIP\Firestone Property\Section 4f approval.doc

PO Box 139, Tahoe Vista, CA 96148 • (530) 546-4212 • FAX (530) 546-2652 • 875 National Ave.
e-mail: ntpud@jps.net • Website: northlaketahoe.net

TEMPORARY USE AGREEMENT

The Tahoe City Public Utility District, as the officials having jurisdiction over resources defined under section 4(f) (49 U.S.C. 303) agree that the following conditions, pursuant to 23 CFR §771.135 (p) (7) regarding temporary use of such resources, apply to a project of the California Department of Transportation (Caltrans) that proposes to conduct geotechnical investigations, roadway rehabilitation, water quality and aesthetic improvements on Route 28 in Placer County:

1. The duration of the occupancy of 4(f) trail is temporary. The duration of the occupancy on the bike trail, from Tahoe City to Dollar Point, under the jurisdiction of the Tahoe City Public Utility District will be less than the time needed for construction of the project. There will be no change in ownership of the land.

2. The scope of the work on the bike trail is minor, i.e., both the nature and the magnitude of the changes to the section 4(f) resource are minimal.

3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the activities or purposes of the resource, on either a temporary or permanent basis.

4. The land being used will be fully restored, i.e., the resource will be returned to a condition which is at least as good as that which existed prior to the project.

5. This Agreement serves as documentation by the agency with jurisdiction over the section 4(f) resource, the Tahoe City Public Utility District, of concurrence with Caltrans and the Federal Highway Administration that the above conditions for temporary use are satisfied by the proposed project.

Robert Lourey — 4/17/03

Bob Lourey, General Manager
Tahoe City Public Utility District

Date

Appendix E Bio-swale and Basin Simulations

BIO-SWALE AND BASIN SIMULATIONS

Bio-Swale Simulation Postmile 1.4

Bio-Swale Simulation 2 PM 1.4

Infiltration Basin Simulation PM 2.5

Appendix F Floodplain Mapping

The following descriptions apply to the flood zone abbreviations used in this section.

ZONE A: Special Flood Hazard Area inundated by the 100-year flood; base flood elevations are not determined.

ZONE AE: Special Flood Hazard Area inundated by the 100-year flood; base flood elevations are determined.

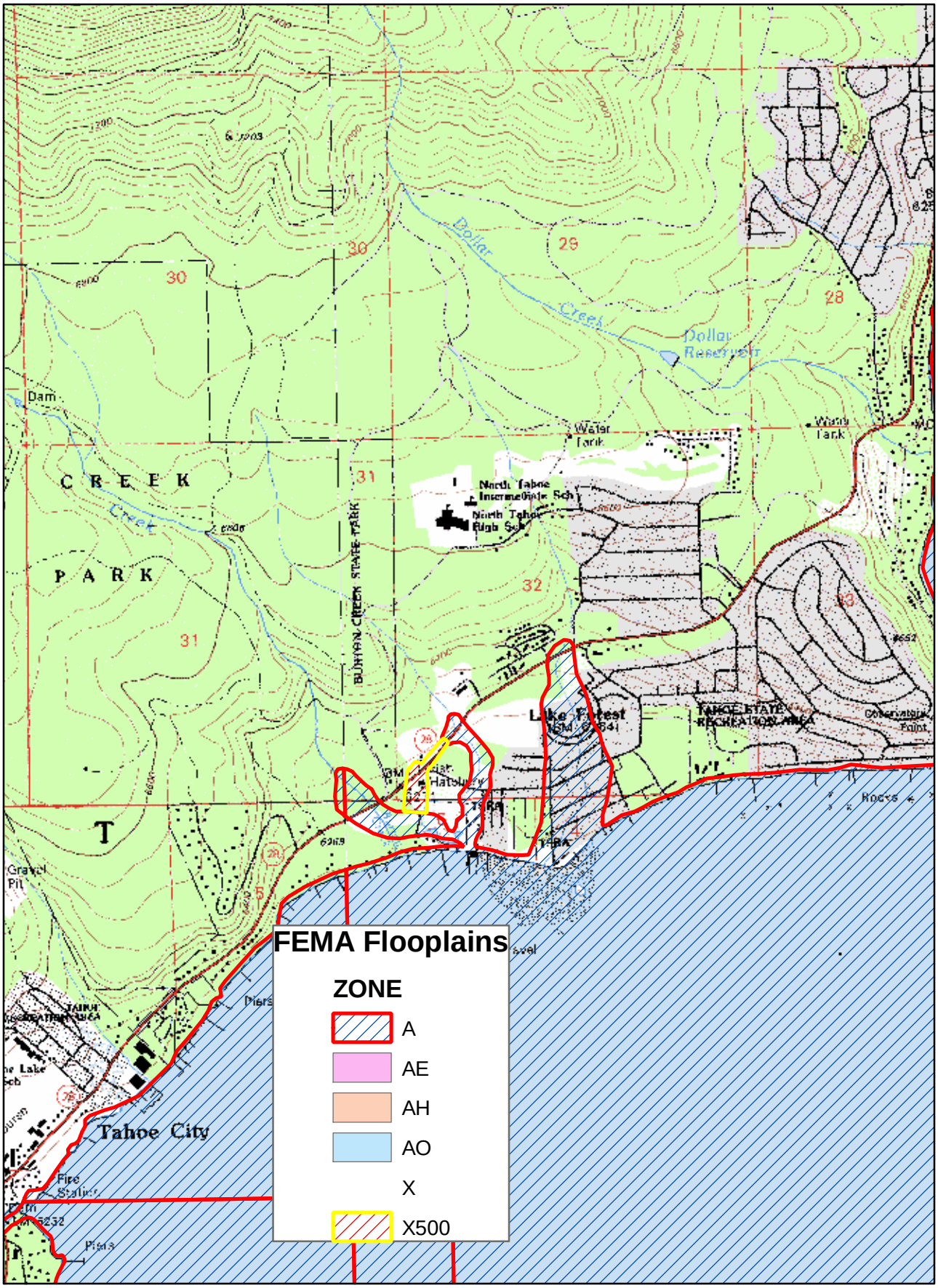
ZONE AH: Special Flood Hazard Area inundated by the 100-year flood; flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations are determined.

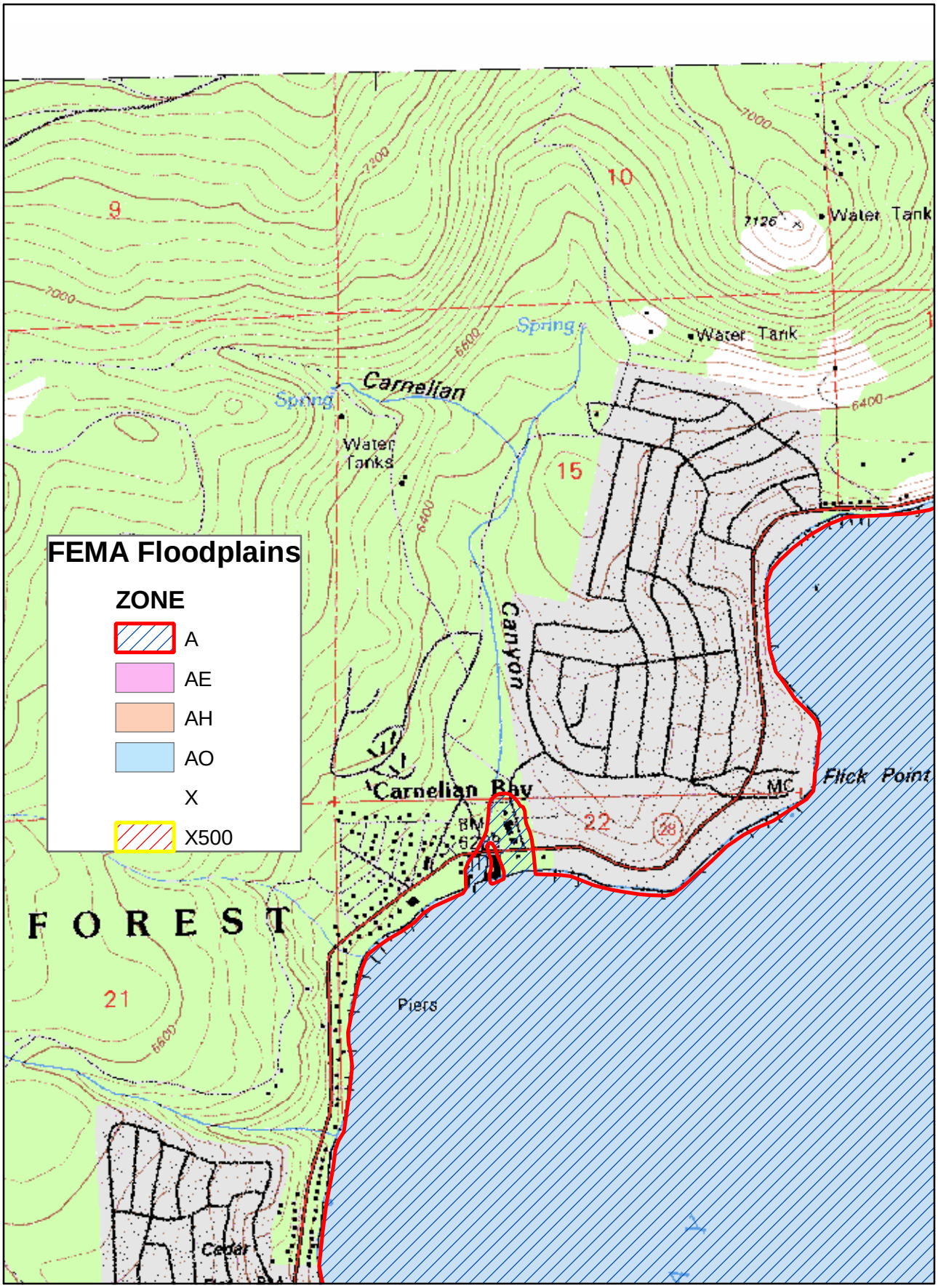
ZONE AO: Special Flood Hazard Area inundated by the 100-year flood; with flood depths of 1 to 3 feet (usually sheet flow on the sloping terrain); average depths are determined. For areas of alluvial fan flooding, velocities are also determined.

ZONE X: Area determined to be outside the 500-year floodplain.

ZONE X500: Area of 500-year flood; area subject to the 100-year flood with average depths of less than 1 foot or with contributing drainage area less than one square mile; and areas protected by levees from the base flood.

Source: http://www.fema.gov/doc/library/faatlist2002.doc


FEMA Flooplains
ZONE
A
AE
AH
AO
X
X500
Tahoe City
Dollar Creek
Dollar Reservoir
CREEK
PARK
Lake Forest
Water Tank
Dam
Gravel Pit
Fire Station
Piers
North Tahoe Intermediate Sch
North Tahoe High Sch
TAHOE STATE RECREATION AREA
BURTON CREEK STATE PARK


FEMA Floodplains
ZONE
A
AE
AH
AO
X
X500
Carnelian
Carnelian Bay
Canyon
Flick Point
Water Tank
Water Tank
Water Tanks
Spring
Spring
FOREST
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Cedar
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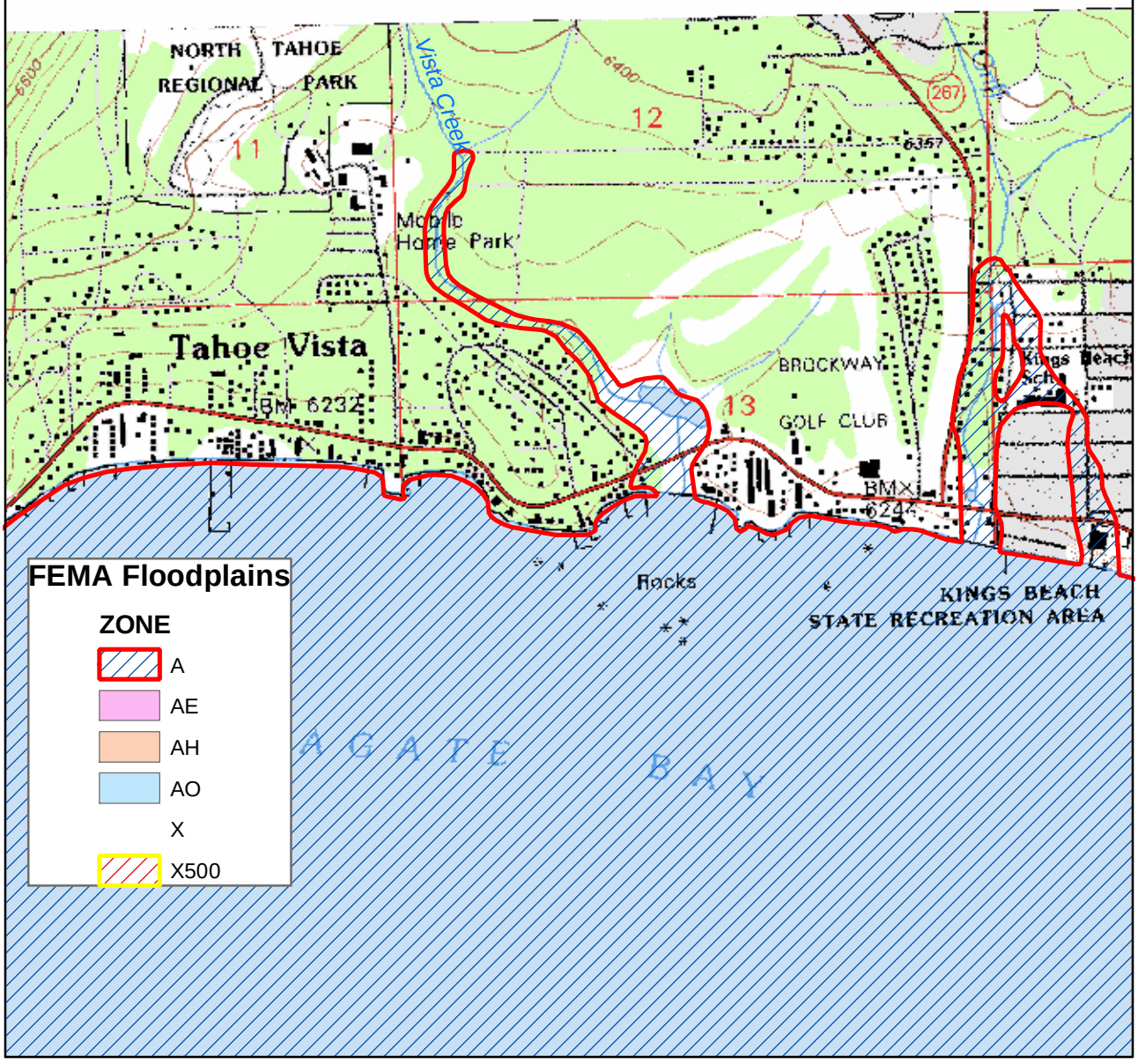
7000
6600
6400
6600
BM
MC


NORTH TAHOE REGIONAL PARK
Vista Creek
6400
6600
267
11
12
13
6357
Mobile Home Park
Tahoe Vista
BM 6232
BROCKWAY
GOLF CLUB
BM 6244
Kings Beach Sch
Rocks
KINGS BEACH STATE RECREATION AREA
AGATE BAY
FEMA Floodplains
ZONE
A
AE
AH
AO
X
X500

Appendix G Conceptual Erosion Control and Revegetation Plan

PLACER 28/ ENVIRONMENTAL IMPROVEMENT PROJECT (EIP)

Conceptual
Erosion Control and Revegetation Plan

Route 28 In Placer County
KP 0.8/9.3 10.2/11.0
(EA 2A9401/290901)

California Department of Transportation
Prepared by North Region Office of Landscape Architecture
November 7, 2003

Prepared By: Steve Nawrath
Landscape Architect #4562

Monica Finn
Revegetation Specialist

1. [i]INTRODUCTION

This Erosion Control/Revegetation plan is being prepared to satisfy the 401 Water Quality Certification and NPDES permit requirements of the Lahontan Regional Water Quality Control Board, Tahoe Regional Planning Agency, 404 permit conditions of U.S. Army Corps of Engineers and 1601 Streambed alteration conditions of California Department of Fish and Game. This project poses to widen shoulders, install asphalt concrete dikes, maintenance turnouts, left-turn lanes and pockets, rehabilitate existing drainage systems, install sand traps and infiltration basins. This conceptual plan identifies commitments Caltrans is proposing to 1) protect and minimize impacts to wetlands, SEZ's and vegetated areas during construction, 2) restore, revegetate and compensate for impacts to wetlands, drainages, SEZ's and vegetated areas disturbed by construction, and 3) monitor mitigation and revegetation results to ensure success.

The goals of the revegetation effort are to successfully reestablish vegetative cover within disturbed construction areas, provide long-term sediment control and the restoration, revegetation and compensation of wetlands, "waters" and SEZ's. Effective revegetation is also intended to minimize scenic impacts and in some cases improve scenic quality throughout the project limits, addressing TRPA "Scenic Threshold" requirements.

2. EROSION CONTROL/REVEGETATION PLAN

Revegetation and Erosion Control will involve the use of several techniques to reduce erosion and promote the reestablishment of native plant communities to areas impacted by construction activity. The following general techniques will be utilized as part of the construction project and the follow-up planting project:

- Minimize the removal of established vegetation and avoidance of trees.
- Removal and collection of the top 100mm of duff material (top soil and organics on the soil surface) during clearing and grubbing operations, to be used as soil amendment.
- Incorporate compost/duff to a depth of 12-18 inches in order to promote biological activity, root penetration and water holding capacity of disturbed soils.
- Use of additional soil amendments, compost and (slow release) organic fertilizer, to improve soil condition and provide nutrients for plant growth.
- Rip or cultivate compacted areas in order to improve water infiltration and root penetration.
- Extensive use of mulch for passive erosion control, derived from pine needles and chipped trees and shrubs removed by construction activities or collected from the project vicinity.
- Install a temporary irrigation system in selected locations (to be determined) in order to promote timely establishment of vegetation prior to winter conditions.
- Develop a revegetation palette based on environmental conditions such as slope, aspect and proximity to water.
- Revegetate all disturbed areas with genetically adapted seed and plant materials.
- Contour grade and place boulders to deter off shoulder parking that negatively impacts long-term establishment of vegetation.
- Incorporate trials into the revegetation areas to test the effectiveness of alternative treatments and site preparation methods.

3. CONSTRUCTION BEST MANAGEMENT PRACTICES: (PERMANENT EROSION CONTROL)

The following erosion control related activities will occur during the roadway/drainage construction phase.

Excavation, Embankment and other Disturbed Areas

Order	Activity
1.	Vegetation (within the defined work limits) will be removed and chipped (clearing and grubbing). Trees, shrubs and other woody debris less than 300 mm in diameter will be chipped and stockpiled. Trees larger than 300 mm will be limbed and stockpiled for later use as landscape features.
2.	The top 100mm of duff material (top soil and organic layer) will be harvested from cleared and grubbed areas and stockpiled for later use a soil amendment.
3.	New slopes and other disturbed areas will be contour graded in order to facilitate revegetation, minimize erosion and integrate newly constructed areas into surrounding natural landscape.
4.	Once grading is complete, disturbed areas will be ripped and/or cultivated. 100 mm of 'Duff' material (to the extent available) and compost will be incorporated into new excavation/ embankment slopes and denuded areas to a depth of 12" to 18". All other areas will receive 50 mm layer of duff over finished grade prior to seeding.
5.	Landscape boulders and logs will be strategically placed back into roadside areas in order to maximize visual integration to the surrounding natural landscape and to prevent automobiles from accessing selected areas.
6.	Final excavation/ embankment slopes and other disturbed areas will be roughened using a tracked vehicle to create an irregular surface to minimize potential for erosion.
7.	All disturbed areas will receive an application of Erosion Control Type 'D' which includes compost, fertilizer, seed and tackifier.
8.	All disturbed areas will be mulched with pine needles and chipped vegetation to a depth of 1".

Basins

Order	Activity
1.	Existing vegetation (within the defined work limits) will be removed and chipped (clearing and grubbing). Trees, shrubs and other woody debris less than 300 mm in diameter will be chipped and stockpiled. Trees larger than 300 mm will be limbed and stockpiled for later use as landscape features.
2.	The top 100mm of duff material (top soil and organic layer) will be harvested from cleared and grubbed areas and stockpiled for later use a soil amendment.
3.	Basin side slopes, berms and other modified areas will be constructed to minimize potential erosion problems and to integrate basins into surrounding natural landscape.
4.	Landscape boulders and logs will be strategically placed back around basins in order to maximize visual integration to the surrounding natural landscape.
5.	50 mm of 'Duff' material will be placed over disturbed areas and roughened using a tracked vehicle to create an irregular surface in order to minimize potential for erosion.
6.	All disturbed areas will receive an application of Erosion Control Type 'D' which includes compost, fertilizer, seed and tackifier.
7.	All disturbed areas will be mulched with pine needles and chipped vegetation to a depth of 1".
8.	Newly constructed channels, spillways and side slopes will receive erosion control blanket or 'Jute' netting in order to prevent erosion.
9.	Basin bottoms shall be ripped to remove compaction and improve infiltration.

4. WETLANDS, WATERS OF THE US AND STREAM ENVIRONMENT ZONE

Other Waters of the United States

Areas temporarily impacted by construction activities will be restored and revegetated. Drainage areas will be contour graded at the completion of work to restore topography and flow patterns.

Disturbed areas will be revegetated using the species present on site. Drainages will be planted primarily with native grasses and shrubs, similar to adjacent upland areas. However, where appropriate site conditions and hydrology are present, plantings will also incorporate mesic species, such as dogwood (*Cornus* sp.), wild rose (*Rosa woodsii* var. *ultramontana*), willow (*Salix* sp.), thimbleberry (*Rubus parviflorus*) and slender cinquefoil (*Potentilla gracilis*).

Projected Impacts: Waters Of The US (Source Caltrans NES, November 2003)

Resource	Resource ID	Area of Permanent Direct Impact	Permanent Fill Below OHWM
Jurisdictional Waters of the U.S. (ephemeral, intermittent, and perennial drainages below OHWM)	Tahoe SP Creek PM 0.75	0.005acre	0.93 Yd^3
	Tahoe SP Creek PM 0.84	0.005acre	0.93 Yd^3
	Burton Creek PM 1.53	0.005acre	1.11 Yd^3
	Burton Creek PM 1.61	0.005acre	0
	Barton Creek PM 1.64	0	0
	Barton Creek PM 1.66	0	0
	PM 1.81	0.011acre	2.03 Yd^3
	PM 1.86	0.009acre	1.67 Yd^3
	PM 1.91	0.009acre	1.67 Yd^3
	PM 1.94	0.005acre	1.11 Yd^3
	Lake Forest Creek PM 1.97	0.008acre	1.48 Yd^3
	Lake Forest Creek PM 2.05	0.007acre	1.48 Yd^3
	Lake Forest Creek PM 2.35	0.005acre	1.30 Yd^3
	Dollar Creek PM 3.50	0	0
	Cedar Flats Creek PM 4.10	0.004acre	1.30 Yd^3
	Watson Creek PM 5.16	0.003acre	0
	Carnelian Bay Creek PM 5.61	0.008acre	0.74 Yd^3
	Carnelian Canyon Creek PM 6.02	0	0
	Carnelian Canyon Creek PM 6.04	0.023acre	0
	Tahoe Vista Creek PM 8.89	0	0
	Total:	**0.112 acre**	**19.64 Yd^3**

Wetlands

Areas temporarily impacted by construction activities will be restored and revegetated. Wetland areas impacted will be contour graded at the completion of work to restore topography and ensure pre-project hydrology. Disturbed areas will be revegetated using the herbaceous wetland species currently found on-site. Wetland vegetation will also be planted in basins, throughout the project limits, where appropriate site conditions and hydrology are present. See page 9 for wetland plant species proposed.

Projected Impacts: Jurisdictional Wetlands (Source Caltrans NES, November 2003)

Jurisdictional Wetlands ("adjacent" to or isolated from areas below OHWM)	Resource ID	Area of Permanent Direct Impact (excluding "Jurisdictional Waters")	
	Tahoe-SP SEZ North (PM 0.76-0.91)	0.004acre	
	Burton SEZ South (PM 1.30-1.43)	0.034acre	
	Burton-SP SEZ North (PM 1.45-1.68)	0.009acre	
	Burton-SP SEZ South (PM 1.45-1.68)	0.003acre	
	Lake Forest SEZ North (PM 1.77-2.09)	0.033acre	
	Lake Forest SEZ South (PM 1.77-2.09)	0.005acre	
	Lake Forest SEZ North (PM 2.30)	0.00acre	
	Carnelian Bay SEZ South (PM 5.85)	0.00acre	
	Carnelian Bay SEZ South (PM 5.90)	0.00acre	
	Carnelian Canyon SEZ North and South (PM 6.00)	0.00acre	
	Tahoe Vista SEZ North and South (PM 8.81-9.00)	0.00acre	
	Kings Beach SEZ North (PM 9.30)	0.00acre	
	Total	**0.087 acre**	

Stream Environment Zones

1 ½:1 replacement of impacted SEZ's will be implemented by restoring and revegetating disturbed areas on site at a 1:1ratio. The additional ½:1 replacement will be achieved by enhancing or enlarging existing degraded SEZ's adjacent to the project limits. On-site replacement will be accomplished by contour grading at the completion of work to restore topography and ensure pre-construction hydrology. SEZ vegetation will be restored by seeding and planting disturbed areas using the herbaceous wetland and riparian species common to SEZ's (see page 9).

Projected Impacts: Stream Environment Zones (Source Caltrans NES, November 2003)

Stream Environment Zone (Jurisdictional areas inclusive)	Resource ID	Area of Permanent Direct Impact (Includes adverse and beneficial Impacts)	Area of Impervious Coverage Removal and/or Revegetation	Area of Additional Impervious Coverage
	Tahoe-SP SEZ North (PM 0.76-0.91)	300 ft^2	0 ft^2	10 ft^2
	Tahoe-SP SEZ South (PM 0.76-0.91)	500 ft^2	500 ft^2	0
	Burton SEZ South (PM 1.30-1.43)	1500 ft^2	1500 ft^2	0
	Burton-SP SEZ North (PM 1.45-1.68)	600 ft^2	500 ft^2	0
	Burton-SP SEZ South (PM 1.45-1.68)	300 ft^2	250 ft^2	0
	Lake Forest SEZ North (PM 1.77-2.09)	1600 ft^2	1000 ft^2	200 ft^2
	Lake Forest SEZ South (PM 1.77-2.09)	400 ft^2	300 ft^2	0
	Lake Forest SEZ North (PM 2.19-2.35)	2700 ft^2	2000 ft^2	0
	Dollar SEZ North (PM 3.40 –3.58)	0 ft^2	0 ft^2	0
	Dollar SEZ South (PM 3.40 –3.58)	0 ft^2	0 ft^2	0
	Cedar Flat SEZ North (PM (4.05-4.15)	200 ft^2	150 ft^2	0
	Cedar Flat SEZ South (PM (4.05-4.15)	200 ft^2	150 ft^2	0
	Watson SEZ North (PM 5.10-5.20)	300 ft^2	150 ft^2	0
	Watson SEZ South (PM 5.10-5.20)	200 ft^2	100 ft^2	0
	Carnelian Bay SEZ North (PM 5.50-5.65)	350 ft^2	200 ft^2	20 ft^2
	Carnelian Bay SEZ South (PM 5.50-5.65)	250 ft^2	150 ft^2	0
	Carnelian Canyon SEZ North (PM 5.90-6.15)	0 ft^2	0 ft^2	0
	Carnelian Canyon SEZ South (PM 5.90-6.15)	0 ft^2	0 ft^2	0
	Tahoe Vista SEZ North (PM 8.81-9.00)	0 ft^2	0 ft^2	0
	Tahoe Vista SEZ South (PM 8.81-9.00)	0 ft^2	0 ft^2	0
	Total	**9,400 ft^2 (0.216 acre)**	**6,950 ft^2 (0.160 acre)**	**230 ft^2 (0.005 acre)**

5. CONSTRUCTION MEASURES: AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES FOR WETLANDS, DRAINAGES AND SEZ'S

Restrict Timing of In-Stream Activities

To avoid direct impacts to surface water quality and fisheries, no work will be performed within a stream channel or wetland until flows are at their seasonal low or have ceased and the streambed is dry. As a guideline, no construction activities will be permitted below the OHWM between June 15th and October 15th, subject to stream conditions. No work or operation of equipment will occur in the wetted channel of any of the project drainages.

Establish Enviornmentally Sensitive Areas

Additional direct and indirect impacts to all vegetated areas, including sensitive biological resources, wetlands, streambeds, SEZ's and adjacent corridors will be avoided or minimized by designating these feature s outside the construction impacts area as "environmentally sensitive areas". ESA information will be shown on contract plans and discussed in the Special Provisions, and will be indicated as such in the field with the use of temporary orange fencing, and where appropriate silt fencing, installed as a first order of work. Contractor encroachment into ESA's will be restricted (including the staging/operation of heavy equipment or casting of excavation materials). Any damaged fencing will be repaired within one working day of discovery. ESA provisions will be implemented as a first order of work and will remain in place until construction activities are complete.

Containment Measures

Caltrans' Standard Specifications require the Contractor to submit a Water Pollution Control Plan. This plan must meet the standards and objectives to minimize water pollution impacts set forth in section 7-1.01G of Caltrans' Standard Specifications. These standards/objectives, at times referred to as Best Management Practices (BMP's). Measures will be employed to prevent any construction material, debris, or petroleum products associated with heavy machinery from entering surface waters or their channels. BMP's for erosion control will be implemented and in place prior to, during, and after construction in order to ensure that no silt, sediment or petroleum products enters surface waters.

Limit Vegetation Removal

Vegetation removal shall be limited to the absolute minimum amount required for construction.

De-Watering Activities

Depending on seasonal flows, de-watering of the streambed or culvert course and or a temporary stream diversion may be necessary where culvert rehabilitation or replacement is proposed. All de-watering activities will observe water quality measures listed above, as well as any permit-related restrictions. Any intakes that may be required for water pumps associated with wetting/ irrigation/ de-watering of sites shall be screened to RWQCB specifications to avoid the intake of fish. If de-watering of the site is deemed necessary, a temporary sediment-settling basin will be constructed downstream of the activity. All discharge waters associated with the de-watering activities will be pumped into the constructed basin before being allowed to re-enter project area drainages.

Weed Free Erosion Control Treatments
To further minimize the risk of introducing additional non-native species into the area, only locally TRPA-approved plant species appropriate for the project area will be used in any erosion control or revegetation seed mix or stock. No dry-farmed straw will be used, and certified weed-free straw shall be required where erosion control straw is to be used. In addition, any hydro-seed mulch used for revegetation activities must also be certified weed-free.

Weed Free Construction Equipment
All off-road construction equipment to be cleaned of potential noxious weed sources (mud, vegetation) before entry the project area (preferably before entry into the Lake Tahoe basin), and after entering a potentially infested area before moving on to another area, to help ensure noxious weeds are not introduced into the project area. The contractor shall employ whatever cleaning methods (typically with the use of a high-pressure water hose) are necessary to ensure that equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required. Equipment washing stations shall be placed in areas that afford easy containment and monitoring (preferably outside of the Lake Tahoe basin), and that do not drain into the forest or sensitive (riparian, SEZ, wetlands, etc.) areas.

Equipment Staging in Weed Free Areas
Staging of equipment should only be done in weed free areas. Landings should be placed in forested areas rather than open flats to help prevent the establishment of noxious invaders such as yellow star thistle, which utilize open sunny areas.

6. REVEGETATION PLAN

Revegetation Planting
Revegetation planting will occur simultaneously to the roadway/drainage construction project. The revegetation effort will install live container plantings of native species to supplement the erosion control seeding and aid the restoration of the project area. It will also fulfill Caltrans mitigation requirements for wetlands, drainages and SEZ's. The species proposed for planting are those indigenous in or adjacent to the project areas. The mix or composition of species will be determined based on post construction habitat conditions and will be defined by upland, wetland, drainage and SEZ. Plant layout will replicate existing vegetative patterns found in adjacent undisturbed areas. Basin side slopes and spillways will also be revegetated; these areas will be planted with species characteristic of seasonally wetter conditions.

Implementation Schedule
Revegetation activities will begin the year of construction. Container planting will be required during construction phases as areas are finished and prior to the end of each construction season. Planting will occur in late summer or early fall each year of construction, then each spring and fall in the following 1-2 seasons after construction depending on plant survival and cover. This phased planting approach is proposed to 1) ensure that areas are revegeteted in a timely manner and 2) adaptive management techniques can be employed to focus revegetation efforts at appropriate locations.

Species
Supplemental seed and container plants used on the project will be derived from genetic stock originating from the Tahoe Basin or vicinity of the same elevation and habitat conditions. The following is a list of species proposed for use in revegetation:

Proposed Container Material

Upland Vegetation Species

Botanical Name	Common Name
Achnatherum occidentalis var. californica	Mountain Needlegrass
Amelanchier alnifolia	Service Berry
Arctostaphylos patula	Greenleaf Manzanita
Artemesia tridenta	Sagebrush
Chrysothamnus nauseosus	Rabbit Brush
Elymus elymoides	Squirreltail
Pinus contorta var. murrayana	Lodgepole Pine
Pinus jeffreyi	Jeffrey Pine
Purshia tridenta	Antelope Bush
Ribes nevadense	Sierra Current
Wyethia mollis	Mules Ears
Symphoricarpos mollis	Snow Berry

Drainages and Wetlands Species

Botanical Name	Common Name
Agrostis idahoensis	**Idaho Bentgrass**
Carex amplifolia	**Sedge**
Carex utrculata	Sedge
Carex nebrascensis	Nebraska Sedge
Cornus sericea	Dogwood
Dechampsia cespitosa	Tufted Hairgrass
Geum macrophylum	Geum
Hordeum brachyantherum	Meadow Barley
Juncus balticus	Rush
Juncus effuses	Rush
Potenilla gracilis	Slender Cinquefoil
Rosa woodsii var. ultramontane	Mountain Rose
Salix sp.	Willow
Sidalcea oregona	Spicate Checker Broom

Erosion Control Seed Mix

Botanical Name	Common Name
Achnatherum occidentalis var. californica	Mountain Needlegrass
Agrostis idahoensis	**Idaho Bentgrass**
Elymus elymoides	Squirreltail
Elymus glaucus	Blue Wildrye
Bromus carinatus	California Brome
Lotus purshianus	Purshings Lotus
Lupinus grayii	Gray Lupine
Lupinus breweri	Brewer's Lupine
Achillea millifolium	Yarrow

Mulch
Mulch material will be generated from two sources. From vegetation removed and chipped during clearing and grubbing operations and from pine needles collected in the Tahoe Basin. The goal is to have a 50% pine needle to 50% chipped vegetation blend. If mulch generated from chipping woody debris is not adequate to fulfill the specifications, then additional pine needle material will be purchased. No straw mulch will be used on the project in the erosion control seeding.

Planting Densities
Grass, forb and wetland plugs will be clustered in groups on 1-foot centers, either alone or associated with shrub and tree plantings. Shrubs and trees will be planted on 1-2m centers. The planting design proposes to group plantings, within disturbed areas based on existing vegetation patterns found in the surrounding landscape. In general groupings will be composed of 60% grass and forb plugs, 30% shrubs, and 10% trees.

Watering
Plants will be watered in at planting and will be watered until the onset of rains or winter dormancy. Supplemental watering will be provided over the first summer and fall (after each planting) using a combination of remote temporary irrigation system and /or truck watering. Regular monitoring will be performed to ensure plants have adequate moisture.

Success Criteria
Prior to construction, vegetation composition, and cover will be characterized from reference sites outside the limits of the work area. The results will serve as the success criteria or goal for the mitigation project for each of the 4 habitat types (upland, wetland, drainage and SEZ).

First year success criteria will be achieved if the following conditions are met:

1. Soil surface is stabilized. No observed slope failures, soil movement or drainage erosion.
2. Total cover (cover from seed, plantings and mulch) is 95% or greater.
3. No areas greater than 3 x 3 meters without established plants.

Second through five year success criteria are met if :

1. Continual increases in plant cover are documented.
2. All target species are present on-site.

Monitoring Plan and Schedule
Qualitative and quantitative monitoring will be performed. Qualitative monitoring will involve visually inspecting the project for plant establishment and growth, as well as, for problems, such as erosion, drainage, weeds or plant mortality. Inspections will occur numerous times over the first year (minimum of 8 visits during the growing season), with a minimum of 2 visits years 2 - 5 (as long as no problems arise). Results will be documented on aerials or project plans. Permanent photo points will be set up to document the revegetation effort. Quantitative monitoring will occur once each year between April and August, for a period of five years. Quantitative sampling will be performed to estimate species richness, and plant cover.

Remedial Actions
If success criteria are not met, an additional planting effort will be implemented to meet requirements. However, prior to initiating any new planting, soil data, site preparation, planting techniques and materials will be evaluated. Caltrans will coordinate with the permitting agencies to determine appropriate remedial actions.